FOREST PRESERVES of Cook County

Des Plaines River Trail: South Extension Planning Study

August 2019

CMAP | HELPING COMMUNITIES PROSPER

Acknowledgements

The Report for the Des Plaines River Trail, South Extension Planning Study is the cumulative effort of many individuals. These include core team and steering committee members and key stakeholders who participated in interviews, meetings, and field visits. These individuals generously offered their time, knowledge, and expertise -- helping to identify opportunities and challenges, goals and objectives, and crucial planning, environmental, and engineering issues, as well as solutions. Their participation has helped CMAP successfully complete this report. The project team would like to thank all of the people who have worked with us to recognize and describe the specific existing conditions that will impact potential trail routes.

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Key Project Partners

Friends of the Forest Preserve
Salt Creek Greenway Association
Riverside-Brookfield High School
Metropolitan Water Reclamation District
Illinois Department of Natural Resources

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Section 1. Introduction

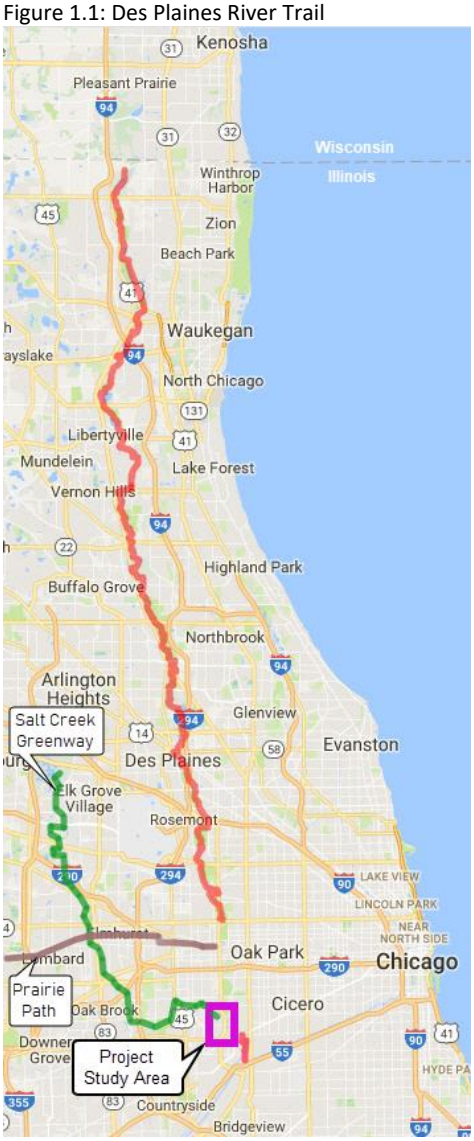
The Des Plaines River Trail: South Extension Planning Study is a joint effort between the Chicago Metropolitan Agency for Planning (CMAP), the Forest Preserves of Cook County (FPCC), and the Villages of Riverside, Brookfield, Lyons, and North Riverside. The purpose of the study is to explore options for developing the Des Plaines River Trail between W. 26th Street in the Village of North Riverside and Ogden Avenue in the Village of Lyons, as well as opportunities for key community connector routes to the trail. The study supports and builds upon recent Forest Preserve and community planning efforts and investments, as well as grassroots interest in completing this trail segment and the Des Plaines River Trail as a whole.

Background and Study Purpose

The existing Des Plaines River Trail is a major, multi-use trail running north-south along the Des Plaines River for approximately 55 miles. The trail's northern terminus is in Lake County, at Russell Road in the Village of Wadsworth, near the Illinois-Wisconsin border. The trail's southern terminus is in the Jerome Huppert Woods, near North Avenue (IL-64) in the Village of River Grove. South of Touhy Avenue, however, the trail becomes a dirt track, prone to flooding and in poor condition. Currently, the Forest Preserve, in partnership with area municipalities and trail advocacy groups, is studying ways to improve this segment.

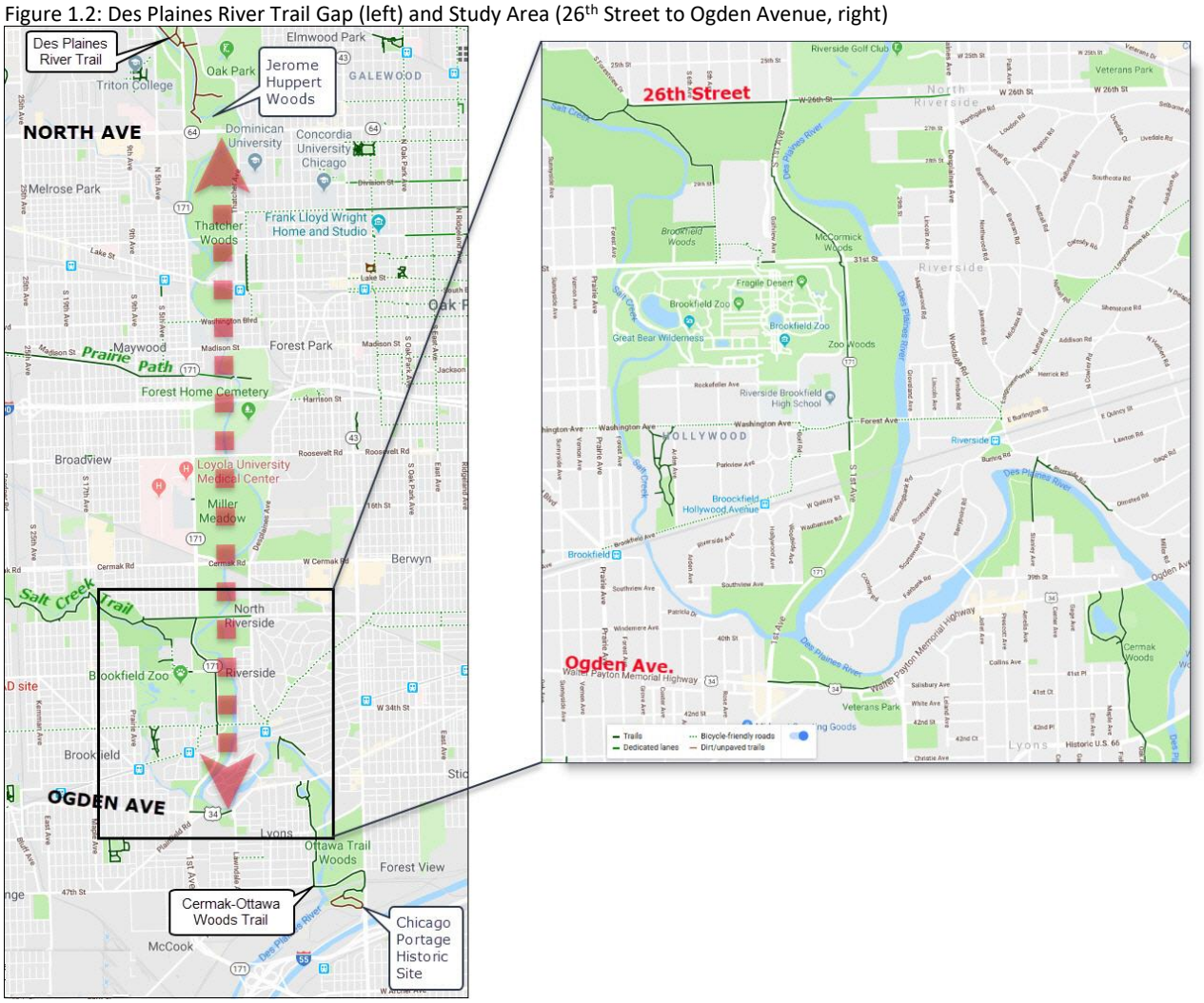
From North Avenue south to Ogden Avenue, the trail remains largely unconstructed. This gap, approximately 6.5 miles in length, provides an opportunity to connect to two major regional trails that end at or near the Des Plaines River: the Illinois Prairie Path (in the Village of Maywood) and the Salt Creek Greenway Trail (in the Village of Brookfield and within this project's study area). South of the gap, in the Village of Lyons, an existing trail runs along the Des Plaines River from the Cermak Family Aquatic Center south to the Chicago Portage National Historic Site. Although it parallels the Des Plaines River, this southern segment is commonly referred to as the Cermak-Ottawa Woods Trail. (See Figure 1.2)

Figure 1.1: Des Plaines River Trail



Source: Google Maps

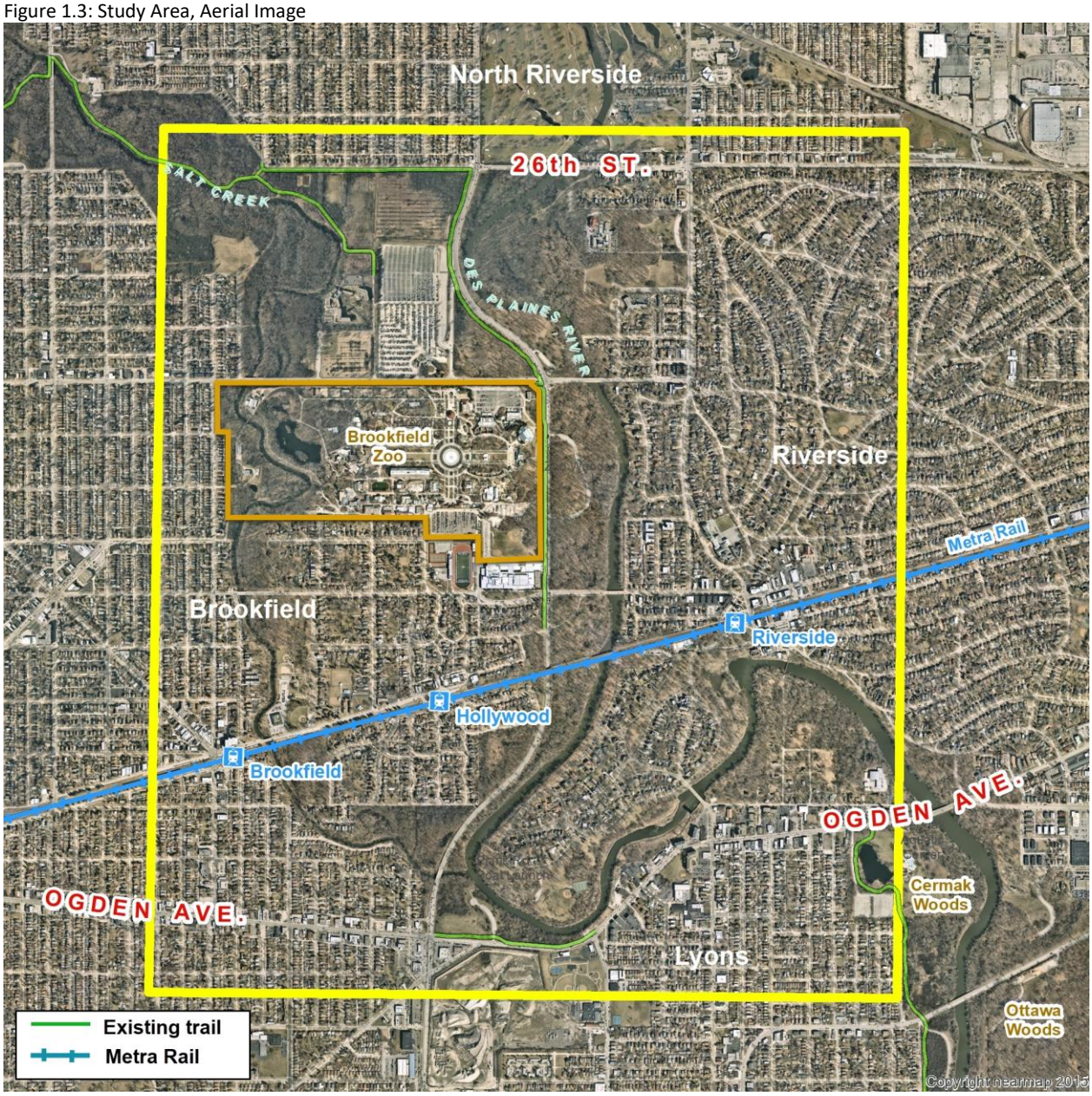
Figure 1.2: Des Plaines River Trail Gap (left) and Study Area (26th Street to Ogden Avenue, right)



Source: Google Maps

This planning study focuses on the southern third (1.8 miles) of the 6.5 mile gap, from 26th Street south to Ogden Avenue. This segment was chosen by the FPCC due to strong interest in and support for a trail and trail connections in the adjacent Villages of Brookfield and Riverside and among key stakeholders, including Brookfield Zoo, Riverside-Brookfield High School, and the Frederick Law Olmsted Society, as well as the West Central Municipal Conference and Cook County Department of Transportation and Highways. In addition, recent investments by the Illinois Department of Transportation (IDOT) along 1st Avenue, by the Village of North Riverside along 26th Street, and by the Forest Preserve District along Ogden Avenue provide important opportunities for creating a continuous trail in this area, connecting the Salt Creek Greenway and the Cermak-Ottawa Woods Trails. Additional studies will be needed to explore feasibility and options for the Des Plaines River Trail north of 26th Street, to completely close this gap and create a continuous Des Plaines River Trail from the Wisconsin border to the Chicago Portage Site. The project study area is illustrated below in Figure 1.3.

Figure 1.3: Study Area, Aerial Image



Source: Nearmap.com

Goals and objectives

The primary goal of this planning study is to identify a feasible, preferred route for the Des Plaines River Trail between 26th Street and Ogden Avenue, in order to connect the Salt Creek Greenway Trail to the Cermak-Ottawa Woods Trail. The identified trail will also connect to future Des Plaines River Trail segments north of 26th Street. The study will also identify potential key connector routes for safe bicycle and pedestrian access between the trail and the adjacent communities. Objectives of the project are to develop potential trail alignments that maintain, to the greatest extent possible, 1) off-street routing in order to increase safety and attract trail users of all ages, abilities, and levels of experience; and 2) to promote and maintain trail users' connection to nature and experience of natural surroundings. Additionally, an important goal is to build a coalition among nearby communities, local and regional stakeholders, and the FPCC for the development of a continuous Des Plaines River Trail (north of 26th Street).

The goals and objectives for this planning study directly reflect and support the vision, goals, and objectives of previous planning efforts by many agencies and key stakeholders involved in this project, including CMAP, the FPCC, and the communities in and near the study area. These plans, summarized in Section 3 of the Existing Conditions Report, include CMAP's Regional Greenways and Trails Plan, the FPCC's Trail Master Plan and Recreation Master Plan, the Village of Brookfield's Active Transportation Plan and Comprehensive Plan, the Village of Riverside Central Business District Plan and Village-Wide Traffic Study, the Village of Lyons Comprehensive Plan, and the West Central Municipal Conference Bicycle Plan, among others.

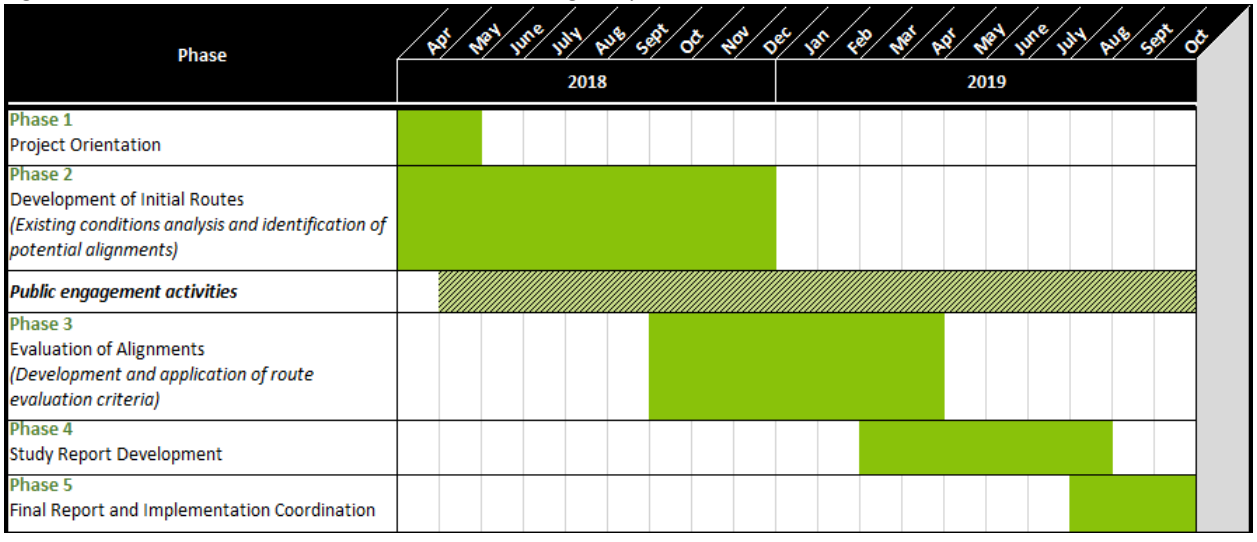
Study Process

The process used to create the report involved multiple steps, including formation of the core project team and steering committee, project visioning and goal identification, ongoing stakeholder and community outreach and engagement, and detailed research and analysis of existing conditions. This work provided the project team with a solid foundation for identifying potential trail alignments and key community connector routes, which we introduced in the Key Recommendations Memorandum and at the April steering committee meeting.

In the report that follows, we describe and discuss alternatives for Des Plaines River Trail and key connector routes in more detail, and highlight potential improvements to increase access and safety for bicyclists and pedestrians at specific locations. We evaluate the trail route options using criteria set out in the Key Recommendations Memo. Finally, we summarize the results of the MetroQuest survey, which ran from May 15 through July, 2019 and had over 1,000 participants, which provided invaluable information on trail use and community needs and preferences.

The planning process began in the spring of 2018 and is expected to conclude this fall. The project scope and study process were developed collaboratively with input and assistance from the FPCC and partner communities (the core team), and with the participation of key implementing agencies, stakeholders, community representatives, and subject matter experts (the steering committee).

Figure 1.4 Des Plaines River Trail, South Extension Planning Study



Source: Chicago Metropolitan Agency for Planning (CMAP)

Existing Conditions Report

The Existing Conditions Report (ECR) provided an overview of current conditions in the area used to identify potential alignments for the Des Plaines River Trail within the study area and to evaluate their feasibility. The ECR also provided the project team a collaborative starting point for the development and refinement of project goals and objectives, and a shared understanding of the key opportunities and constraints for developing the Des Plaines River Trail within study area limits. The ECR was completed in March 2019, and is available for download on the project website at https://www.cmap.illinois.gov/programs/LTA/des-plaines-river-trail-study.

Key Recommendations Memorandum

The Key Recommendations Memo built upon an assessment of priorities and constraints identified in the initial stages of the study process, including the findings of the Existing Conditions Report, ongoing public outreach activities, steering committee meetings, and key stakeholder interviews. The memo outlined key issues and opportunities, which provided the foundation and direction for the formulation of recommendations. The memorandum also outlined the major sections or themes to be addressed in the study report and provided a high-level discussion of the type and direction of recommendations within each section of the report.

ON TO 2050

The Chicago Metropolitan Agency for Planning is the official regional planning organization for the northeastern Illinois counties of Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will. On October 10, 2018, CMAP adopted the ON TO 2050 Regional Comprehensive Plan, which builds on the agency's prior regional plan, GO TO 2040, which was released in 2010 and updated in 2014. The ON TO 2050 Plan establishes coordinated strategies to help guide transportation investments and frames regional priorities on development, the environment, the economy, and other issues affecting quality-of-life. The plan identifies three clear, overarching principles, which inform every ON TO 2050 recommendation:

- **Inclusive Growth:** Growing our economy through opportunity for all.
- **Resilience:** Preparing for rapid changes, both known and unknown**.**
- **Prioritized Investment:** Carefully target resources to maximize benefit.

The Des Plaines River: South Extension Planning Study helps to advance goals related to mobility, access, safety, and livability. ON TO 2050 envisions a multimodal transportation system that promotes bicycling and walking, both for transportation and for recreation. It also recognizes a growing desire among the region's residents for healthy, active lifestyles, and the need to create conditions and infrastructure that will make such lifestyles possible. To these ends, the plan recommends implementation of the Regional Greenways and Trails Plan, which identifies the Des Plaines River as a major trail corridor. By undertaking a project that will help complete the Des Plaines River Trail – and thereby help realize the larger regional trail system – this planning study advances important principles and goals of ON TO 2050. By doing so, the study will help shape the future of the region's active transportation network, expand its recreational opportunities, and enhance quality of life in the region as a whole.

Report Organization

The Study Report is organized into the following sections:

Section 1: **Introduction** describes the purpose and nature of the planning study, provides background, and outlines the process utilized to create the report.

Section 2: **Des Plaines River Trail Alignments** describes and discusses three potential alignments for the Des Plaines River Trail within the project study area:

1. Option 1 – Salt Creek Alignment
2. Option 2 – First Avenue Alignment
3. Option 3 – Riverside Alignment

Section 3: **Trail Alignment Evaluation** evaluates identified trail route options, using the criteria and method proposed in the Key Recommendations Memo, in order to arrive at a preferred alternative, which can be advanced to Phase 1 engineering.

Section 4: **Key Community Connector Bicycle Routes** describes and discusses three key community connector routes, and slight variations on these routes, which link adjacent communities to the trail corridor:

1. Forest Avenue, Riverside
2. Washington Avenue, Brookfield
3. 31st Street, Brookfield

Section 5: **Key Spot Improvements** describes potential improvements at key locations, such as intersections and crossings, along identified trail and community connector routes. It also provides conceptual illustrations for some of these improvements.

Appendix: **Supportive Policies, Programs, and Funding Information** provides information and examples of common policies, programs, and funding sources that can help communities improve conditions for, raise awareness of, and increase bicycling, walking, and active transportation.

Next Steps

The Study Report is an interim document that will be presented to the FPCC, the project Steering Committee, key stakeholders, and the general public for review and discussion. Once the review is complete and comments incorporated, the Report will be finalized and presented to the FPCC and partner communities for approval, integration into planning efforts, and – perhaps most importantly – to assist them in their collaborative, collective, multi-jurisdictional effort to design and construct the Des Plaines River Trail within the project area. The chief function and value of the Final Report will be to advance the identified preferred trail alignment and key community connector routes to Phase 1 engineering. Completion of Phase 1 will make the project eligible and well-positioned to seek funding from the federal competitive grant programs that typically support Phase 2 and Construction for similar trail projects – namely, CMAQ, TAP, and ITEP.

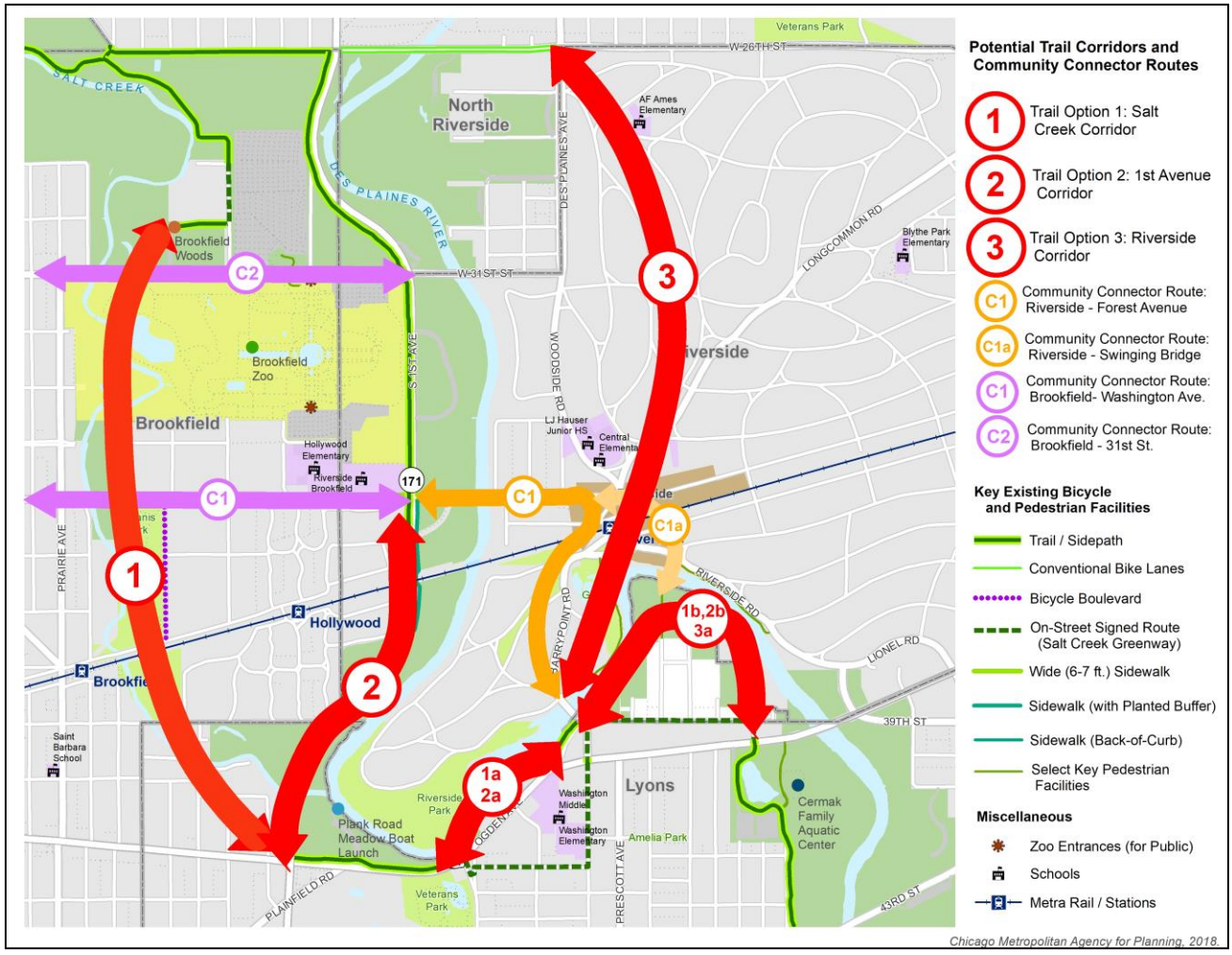
Section 2. Des Plaines River Trail Alignments

Introduction

This Planning Study was undertaken to help the FPCC, partner municipalities in the study area, and key stakeholders identify opportunities for creating a continuous trail along the Des Plaines River between 26th Street and Ogden Avenue, to connect the existing Salt Creek Greenway in Brookfield and Cermak-Ottawa Woods Trails in Lyons. The first part of the Study's recommendations focus on potential alignments for this important trail connection.

Through a planning process that included research and analysis for the ECR, site visits, community outreach, Steering Committee meetings, and key stakeholder interviews, the project team identified three potential corridors for the trail. These corridors (along with key community connector routes) were illustrated conceptually in the Key Recommendations Memo.

Figure 2.1: Proposed Trail and Key Community Connector Route Corridors

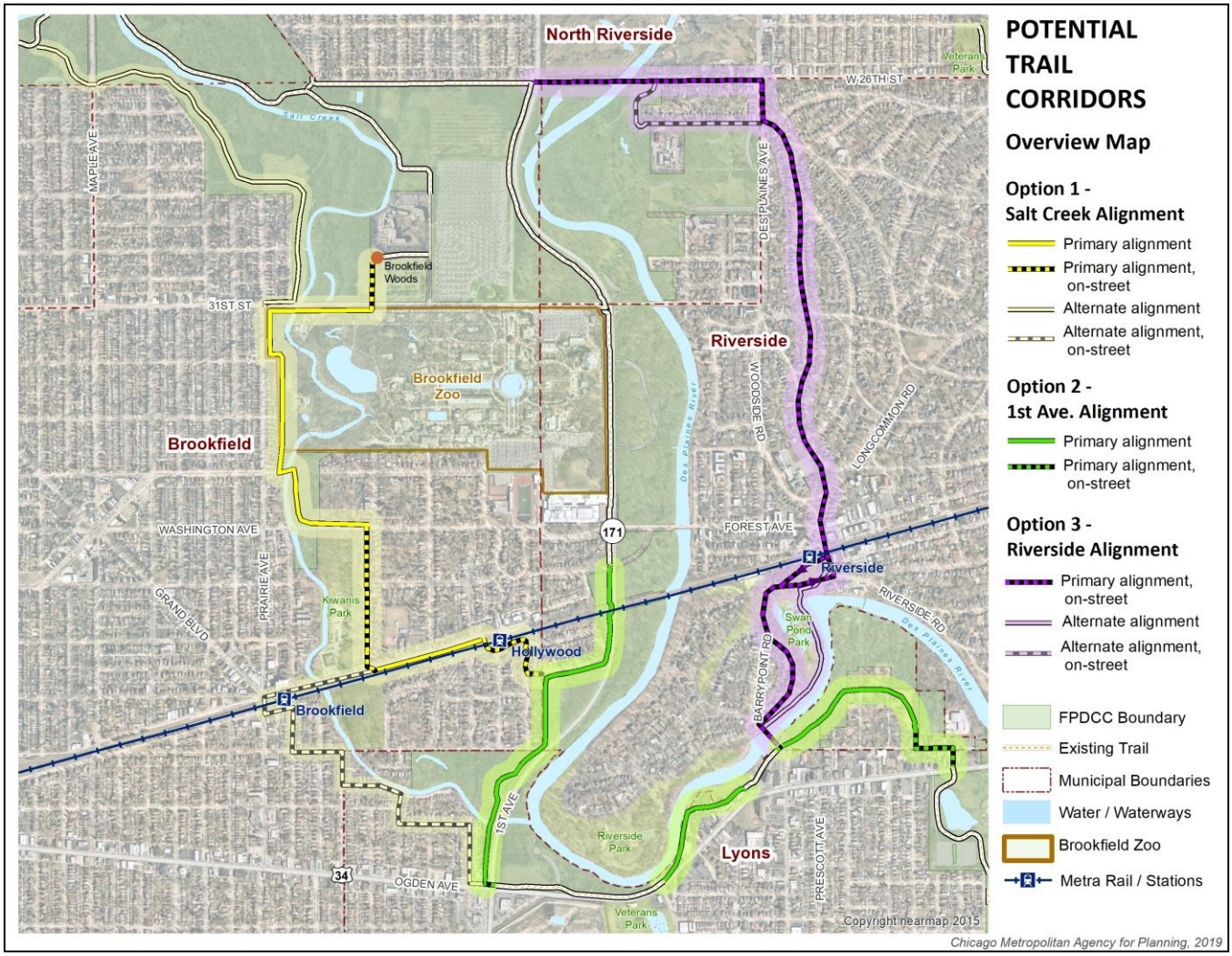


The three potential trail corridors are:

1. Option 1 – Salt Creek Corridor
2. Option 2 – First Avenue Corridor
3. Option 3 – Riverside Corridor

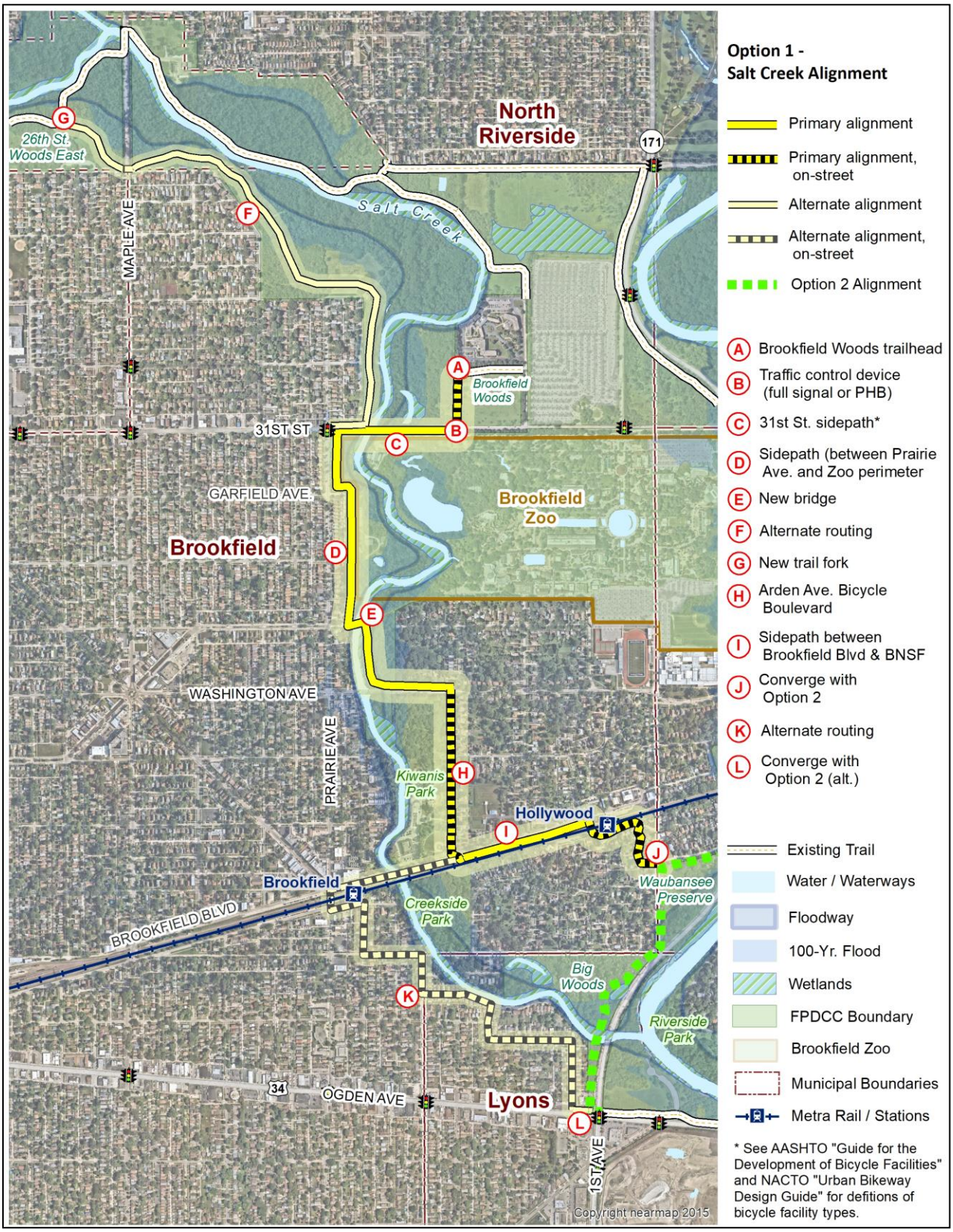
Preliminary analysis indicated that all three corridors would be feasible. Accordingly, further analysis was undertaken to determine more detailed routing and to better understand the potential advantages, challenges, and trade-offs of each option. It should be noted, however, that all analysis and evaluation in this study remains preliminary and planning-level. Phase 1 engineering will be required to identify exact alignments, detailed cost estimates, and environmental constraints. As can be seen in Figure 2.1, corridor Options 1 and 2 share segments south of the Des Plaines River (in the southeast part of the study area), and all three options share the final segment (in the Riverside Lawn area). Figure 2.2 shows all three primary alignments, as well as alternative routing for segments of Options 1 and 3. The map also indicates whether segments are on-street or off-street.

Figure 2.2: Trail Alignment Options – Overview Map



Option 1 – Salt Creek Alignment

Figure 2.3: Option 1, Salt Creek Alignment



Option 1 represents the western-most of the three identified potential trail alignments, roughly following the course of Salt Creek from Brookfield Woods to Waubansee Preserve (primary alignment). This alignment would keep the trail within the Village of Brookfield, until a point near the confluence of Salt Creek and the Des Plaines River, where the trail corridor passes into the Village of Lyons. This option would extend the existing Salt Creek Greenway Trail in a "natural" and intuitive manner for trail users coming from the west. In order to reinforce that fact and maintain continuity, the proposed alignment of Option 1 is designed to follow as closely as possible the course of Salt Creek. However, some on-street routing would be necessary due to constraints and barriers such as the Zoo, residential development, the BNSF rail line, flood zones, and Salt Creek itself. This option has alternate routings at the northern and southern ends. The fact that the Salt Creek Greenway Trail was never constructed, though a Phase 1 was completed, south of Brookfield Woods attests to the significant challenges of this alignment. Significant barriers, high costs, and maintenance concerns were cited as impediments to implementation.

The primary alignment for this option begins (at its northern end) at the Brookfield Woods trailhead (A). Heading south from the trailhead, a new traffic signal or beacon would be required at the intersection of the Brookfield Woods entrance drive and 31st Street to create a safe crossing of 31st Street (B). From here, the trail would continue west, across Salt Creek, to Prairie Avenue in the form of a sidepath on the south side of 31st Street (C). This route was chosen to take advantage of the design of the 31st Street bridge over Salt Creek, which includes full accommodation of bicyclists and pedestrians on the south side of the structure in the form of 10' wide, barrier-protected shared use path. The north side of the bridge has only a 7' sidewalk.

Figure 2.4: Current bike-ped accommodation on 31st bridge

Source: Google Streetview

At Prairie Avenue, the trail would turn south. The existing sidewalk on the east side of Prairie Avenue would be widened to bikeway standards (10'-12'). Preliminary analysis indicates that this facility can be constructed between the existing chainlink fence (Zoo perimeter) and trees in the parkway between 31st Street and Garfield Avenue. However, if not possible, the relocation of the chainlink fence and/or the removal or relocation of trees may be necessary. At Garfield Avenue, the trail would jog east to run between Monroe Avenue Alley and the Zoo perimeter fence (D). Again, it appears that the trail can be

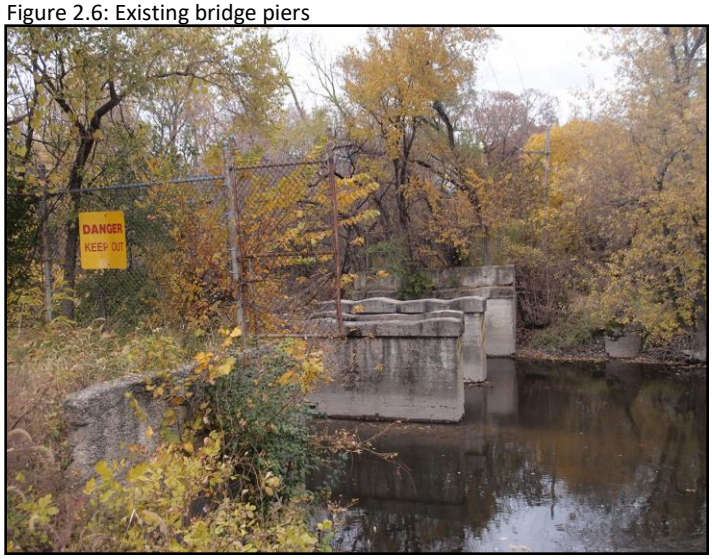
accommodated here without moving the Zoo perimeter fence. However, it should be noted that residents currently utilize the east side of the alley for additional parking. If necessary, the fence could be relocated and the trail routed slightly to the east (but still west of Zoo maintenance buildings). See Figure 2.5.

Figure 2.5: Concept – Monroe Avenue alley

Source: Google Streetview

At Monroe Avenue, the trail would cross to the east side of Salt Creek, potentially utilizing existing stone piers and abutments from a former road or rail line (E). Retrofitting these structures to carry the trail over Salt Creek may be relatively costly. Another option for crossing Salt Creek is located approximately 530 feet upstream: an abandoned rail bridge. Both bridges would bring the trail to the east side of Salt Creek, to land currently within Zoo boundaries.

Figure 2.6: Existing bridge piers



Source: CMAP Team

The trail would then continue south to Washington Avenue; then east to Arden Avenue, where the Village of Brookfield recently installed a bicycle boulevard, which utilizes special (bicycle boulevard) pavement markings, signage indicating that "bicyclists may use the full lane," and other traffic calming treatments (H). The trail route would make use of this on-street facility between Washington and Brookfield Avenues. An alternative – to avoid on-street, mixed-traffic

conditions – would be to route the trail through Kiwanis Park. However, the pedestrian paths in this park would have to be improved and widened to accommodate bicyclists and other trail users, which may conflict with other park uses, increase costs, and call into question the installation of the bicycle boulevard.

At Brookfield Boulevard – where crossing improvements would be needed – the trail turns east, utilizing the land along the north side of the BNSF rail line (I). Fencing may be required to reduce potential conflicts between trail users and the rail line. At Hollywood Avenue, the trail would be routed on-street, along Riverside Avenue, Woodside Avenue, and Waubansee Road, where it would meet the Option 2 (described below) (J), continuing south through the FPCC's Waubansee Preserve and Big Woods.

Alternate routing at the southern end of the Option 1 alignment (K) would run west from Arden Avenue along Brookfield Avenue; cross the BNSF tracks on Prairie Avenue; and continue on local, residential roads to Fern and Ogden Avenue, where the existing sidewalk would be widened to bikeway standards between Fern and 1st Avenue, where it would meet Option 2 routing (L). Alternate routing at the northern end of the corridor would split off from the existing Salt Creek Greenway Trail near the 20th Street Woods East parking lot (G), cross Maple Avenue at 26th Street, and continue south and east to 31st and Prairie Avenue (F), where it would meet the primary alignment. This alternate routing would parallel -- and thus duplicate -- the existing trail on the north bank of Salt Creek. It does have the advantage, however, of avoiding the need for a new signal or beacon on 31st Street.

Major barriers along this alignment include:

- 31st Street (a 4-lane, high-speed, high volume arterial, with no signals between Golfview and Prairie Avenues)
- Brookfield Zoo (especially maintenance/service buildings and facilities along the western edge of Zoo grounds)
- Salt Creek itself (an alignment in this corridor would need to cross Salt Creek one or more times)
- Metra / BNSF rail lines and ROW along Brookfield Avenue (crossings exist only at Hollywood and Prairie Avenues, and both are at-grade)
- On-street segments and roadway crossings in mixed-traffic conditions

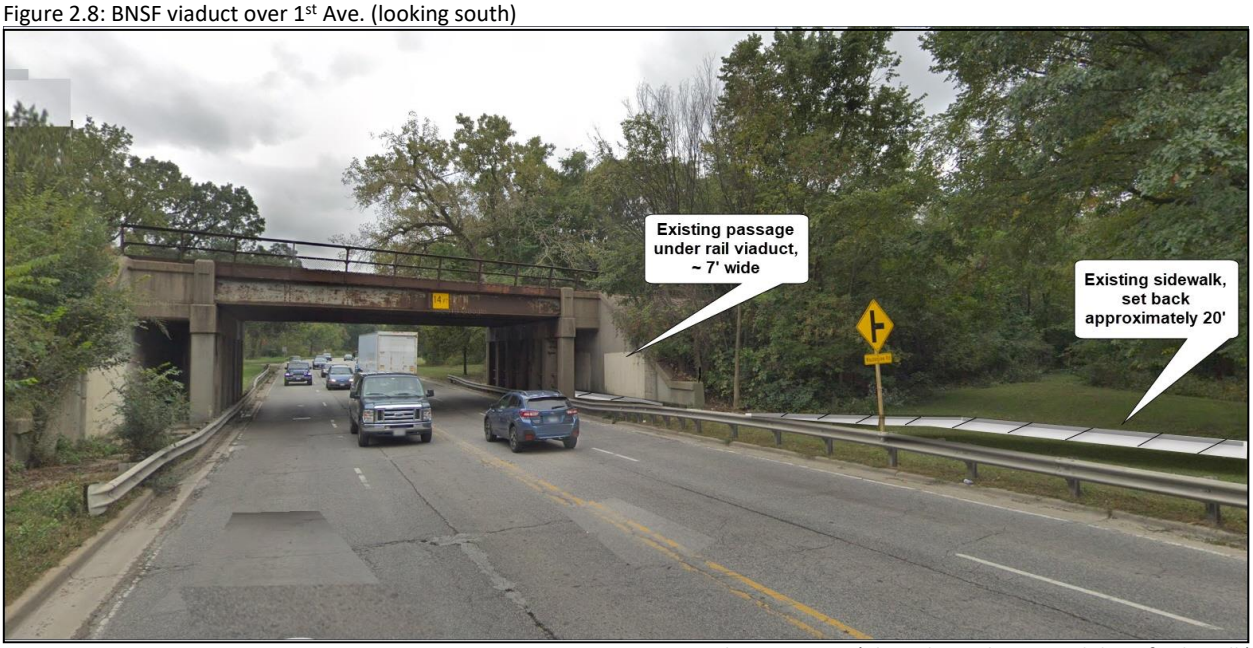
Option 2 – First Avenue Alignment

Figure 2.7: First Avenue Alignment (western segment)

Option 2 consists of three distinct segments. The western-most segment of Option 2 utilizes IDOT right-of-way and FPCC lands (Waubansee Preserve and Big Woods) adjacent to – and on the west side of – 1st Avenue, from Parkview Avenue south to Ogden Avenue. This option extends the sidepath recently constructed along 1st Avenue, from 26th Street (with a connection to the Salt Creek Greenway Trail), south 1.1 miles to Parkview Avenue (just south of Riverside-Brookfield High School) (A).

The first, northern-most stretch of the proposed sidepath extension – between Parkview Avenue and Waubansee/Forbes Road – entails widening the existing sidewalk on the west side of 1st Avenue, approximately 1000 feet in length, to bikeway width and standards (C). This existing sidewalk is separated from 1st Avenue by a grass buffer strip, approximately 20' in width. However, the BNSF rail line creates a pinch-point, where the sidewalk bends in toward the road to pass under the rail bridge between the retaining wall and bridge pillars (B). The width of the sidewalk under the rail bridge is approximately 7 feet between the wall and pillars.

Figure 2.8: BNSF viaduct over 1st Ave. (looking south)



Source: Google Streetview (altered to enhance visibility of sidewalk)

At Waubansee/Forbes Road, the trail would turn west, running along the northern edge of Waubansee Preserve (D). This segment of trail would entail widening the existing sidewalk, which is set back approximately 15 feet from the south side of Waubansee Road, to bikeway width and standards. The length of this sidewalk is approximately 800 feet in length. At Southview Alley (i.e. the alley behind Woodside Avenue), the trail would turn south (E). The existing vegetation (primarily buckthorn) would need to be cleared – or used as a screen/buffer. As an alternative to a vegetative screen, fencing could be installed between the alley and the trail.

Another pinch-point exists where Southview Avenue and Southview Alley meet (F). The distance between 1st Avenue and the existing curb at the southeast corner of Southview and Southview Alley is approximately 13.5'. This corner will likely need to reconfigured to accommodate the trail. Preliminary analysis indicates that this reconfiguration is feasible and that an additional 8'-10' in width can be gained, which would allow for the trail to pass from the Waubansee Woods to Big Woods. See Figure 2.9.

South of Southview Avenue, the trail would enter FPCC's Big Woods area. Although engineering will be needed to verify details, preliminary analysis indicates that dropping the trail down to the bottom of the embankment on the west side of 1st Avenue would be the preferred alignment here (G). This alignment would help minimize environmental impacts and more effectively buffer the trail, visually and aurally, from the traffic on 1st Avenue. It would also avoid the high costs of a retaining wall and fill needed to construct a shelf on the west side of 1st Avenue to support a trail in that location. Following this alignment, the trail would hug the bottom of this embankment as closely as possible, until a small wetland area intervenes and forces the trail alignment to curve around the west side of the wetland (H). The route would continue south, through Big Woods, to Salt Creek. A new bridge would then carry the trail over the Creek, in a location approximately 60 ft. upstream (west) of the 1st Avenue bridge (I). Preliminary analysis suggests that a prefabricated bridge, approximately 200' in length, could be used to span Salt Creek. The ramp on the north approach would, it appears from preliminary analysis, need to be approximately 200' in length, while that on the south bank could be significantly shorter (approximately 100'-120'), due to high ground on the south bank.

Figure 2.9: Pinch-point at Southview Ave. and Alley

Source: Google Streetview and www.nearmap.com

The trail would continue south within FPCC property adjacent to 1st Avenue, cross the existing driveway (entrance/exit to Burger King), and arrive at Ogden Avenue (J). The approximate total length of the proposed new trail, including the bridge and bridge ramps, from Waubansee Road and Southview Alley south to Ogden Avenue is 2,800 feet.

From the southern terminus of the western segment of Option 2, trails users would cross 1st Avenue on the north leg of the intersection of Ogden Avenue and 1st Avenue, and proceed east on the existing sidepath running along the north side of Ogden Avenue between 1st Avenue and Lawndale Avenue (K).

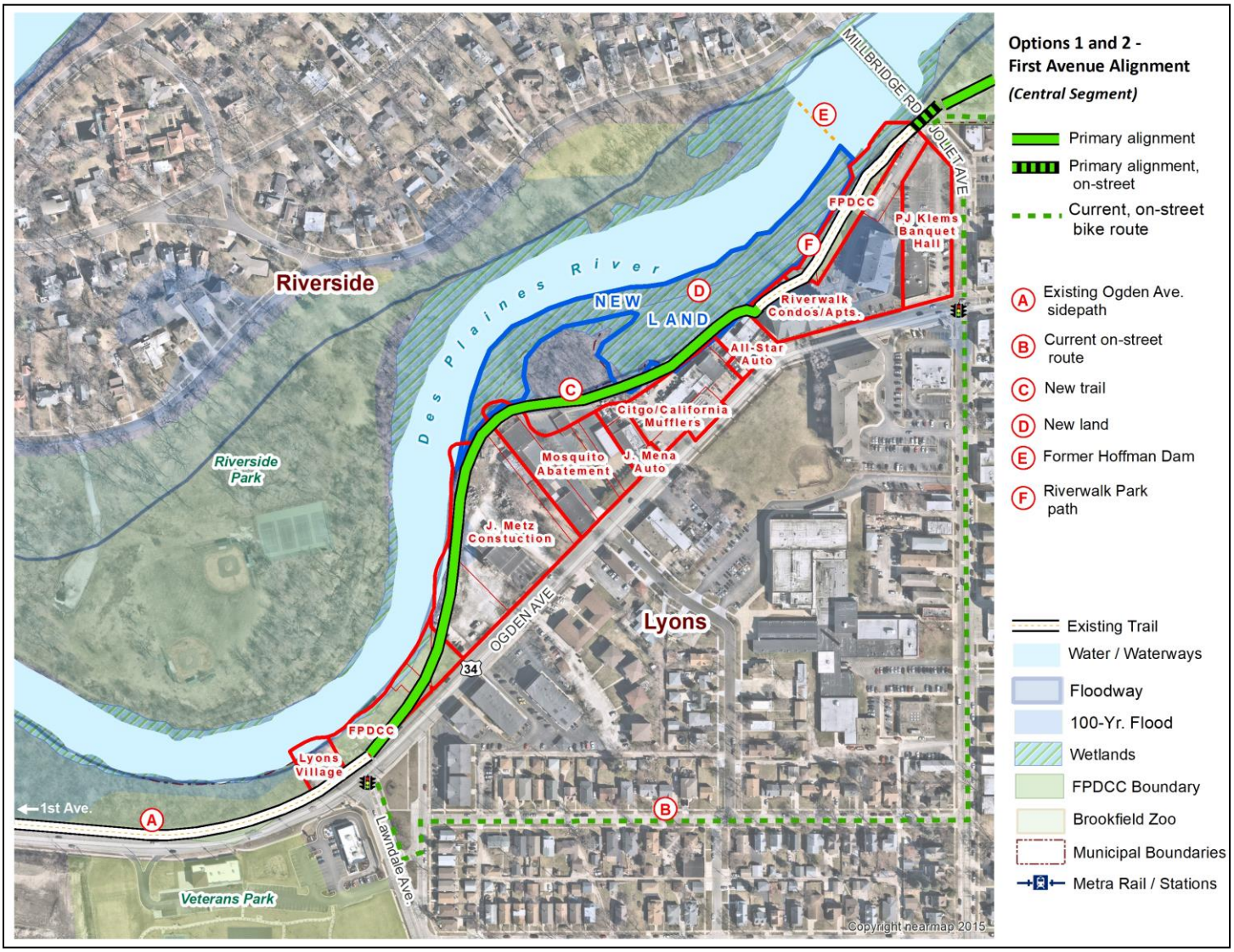
The total length for the western segment of Option 2 (i.e. from Parkview Avenue to Ogden Avenue, on the west side of 1st Avenue) is approximately 0.90 miles. The large majority of the trail would be located within Forest Preserve property, and it would be entirely off-street (other than crossings locations). The main issues or challenges along this segment include:

- The BNSF viaduct pinch-point
- The pinch-pint at Southview Avenue/Alley
- The need to cross Salt Creek

The BNSF pinch-point may require a design exception, allowing for a relatively short segment of sidewalk to function as a shared-use facility. The Southview pinch-point will entail coordination with the Village of Brookfield and with nearby residents on Woodside Avenue. Key objectives for the engineering of this segment are:

- To minimize environmental impacts (wetlands, flood risks, and sensitive habitats)
- To minimize overall project cost (fill, wetland mitigation, bridge construction)
- To enhance trail user experience (connect with nature, shield from traffic)
- To reduce and mitigate any concerns for security or privacy among nearby residents

Figure2.10: First Avenue Alignment (central segment) [Options 1 and 2]



Moving east from 1st Avenue, the proposed trail route is shared by both Options 1 and 2 (see Figure 2.10, above). From the intersection of 1st Avenue and Ogden Avenue, the alignment uses the existing sidepath on the north side of Ogden Avenue, which extends east to Lawndale Avenue (A). At Lawndale Avenue, the current Salt Creek Greenway Trail crosses Ogden Avenue to continue as an on-street, signed route through the Village of Lyons (along Salisbury Avenue, Joliet Avenue, and 39th Street) (B). This study has identified a potential off-street alignment (C) along the south bank of the Des Plaines River, on newly-formed land (E) that has emerged as a result of the removal of Hoffman Dam in 2012 (D). As noted in the ECR, dam removal has resulted in significantly lower water levels and other hydrologic changes in the reach of the Des Plaines River southwest of Millbridge Road bridge. The lower levels have exposed land on the south bank, which presents new opportunities for the development of an off-street trail. This proposed segment would connect the Ogden Avenue sidepath to the existing path in RiverwalkPark (F). More broadly and importantly, an off-street alignment would help to maintain the scenic character and the traffic-separated, family-friendly nature of the Salt Creek Greenway and Cermak-Ottawa Woods Trails, which this study seeks to connect.

The new land is located behind several businesses that front on Ogden Avenue, between Joliet Road and Lawndale Avenue. Parcel data shows that these properties extend close to, or into, the new land – and, in a several cases, into the river itself. The Village of Lyons has expressed an interest in pursuing acquisition of properties and/or an easement behind them to create this segment of trail and connect the existing Ogden Avenue sidepath and the Riverwalk Park path with a continuous, off-street trail in a natural setting along the river.

Implementation of this segment would likely require hydraulic modeling and a Letter of Map Revision (LOMR). These tasks, if needed, would be included in Phase 1 engineering. In addition, a permit from IDNR for construction in a floodway may be required. Recreational trails, however, can be automatically authorized by Regional Permit No. 3, providing that the "Terms and Conditions" are met. IDNR can also issue an Individual Formal Permit for recreational trails in the floodway that do not meet Regional Permit No. 3 requirements. In either case, the owner of the trail would apply to IDNR for the appropriate permit(s). In addition, the Chicago District of the Army Corps of Engineers may have a regulatory role. This too would be determined as part of Phase 1 engineering.

While preliminary analysis suggests that the design and construction of the trail here may face regulatory and design challenges, that same analysis indicates that it is in fact feasible. There are many examples and precedents in our region for trails near or in floodways, floodplains, and wetlands. See Figure 2.11, below.

Challenges for this potential off-street segment of the corridor include:

- Property acquisition and/or easements
- Permits to build in the flood plain and mitigation of any wetland impacts

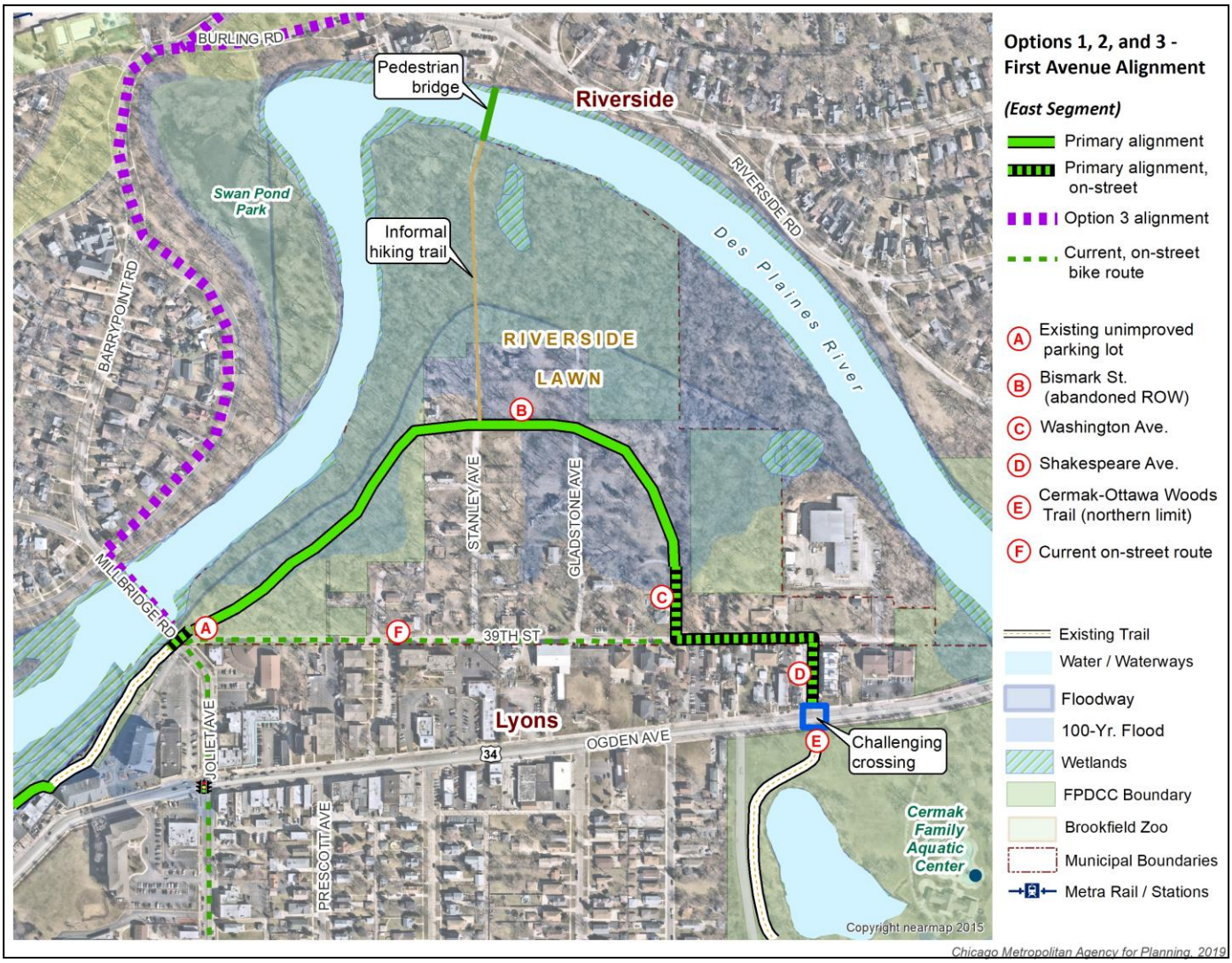
Widening the sidewalk on the north side of Ogden Avenue to bikeway standards (8-14 foot wide shared-use facility) between Lawndale and Joliet Avenues may provide a less costly alternative for this segment of the trail. However, preliminary analysis indicates that this option would face significant challenges in terms of ROW. Already, with a standard, 5-foot sidewalk, constraints and pinch-points exist. Moreover, trail user experience, comfort, and safety would be negatively impacted by routing the trail along Ogden Avenue, directly adjacent to travel lanes carrying high volumes of high speed automobile and truck traffic, and where multiple driveways are present. Additional study, as part of Phase 1, may further explore this option.

Figure 2.11: Examples of trails near waterbodies and wetlands

Source: Google Streetview

From the intersection of Millbridge Road/Joliet Avenue and 39th Street, east to the intersection of Ogden Avenue and Shakespeare Avenue – where the Cermak-Ottawa Woods Trail begins – all three trail alignment options would follow the same proposed route. This segment passes through unincorporated land (known as Riverside Lawn), north of 39th Street and south of the Des Plaines River, which belongs to the FPCC or is in the process of being acquired due to chronic flooding.

Figure2.12: First Avenue Alignment (east segment) [Options 1, 2, and 3]



From the existing unpaved parking lot in the southwest corner of this area (at the intersection of Millbridge Road/Joliet Avenue and 39th Street) (A), the trail would run north to the abandoned Bismark Street ROW (between Stanley and Gladstone Avenues) (B). The proposed alignment would then turn south to meet Washington Avenue (C). From there, it would continue for short on-street segments along Washington Avenue, 39th Street, and Shakespeare Avenue (D), to Ogden Avenue -- where the Cermak-Ottawa Woods Trail begins (E). As part of the design and construction of this trail segment, we recommend that the unpaved parking lot be reconstructed to serve as a major trailhead, with automobile and bicycle parking, signage, and other amenities (shade canopy, picnic table, water fountain, toilet, etc.).

Challenges in this segment, which all three route options utilize, include:

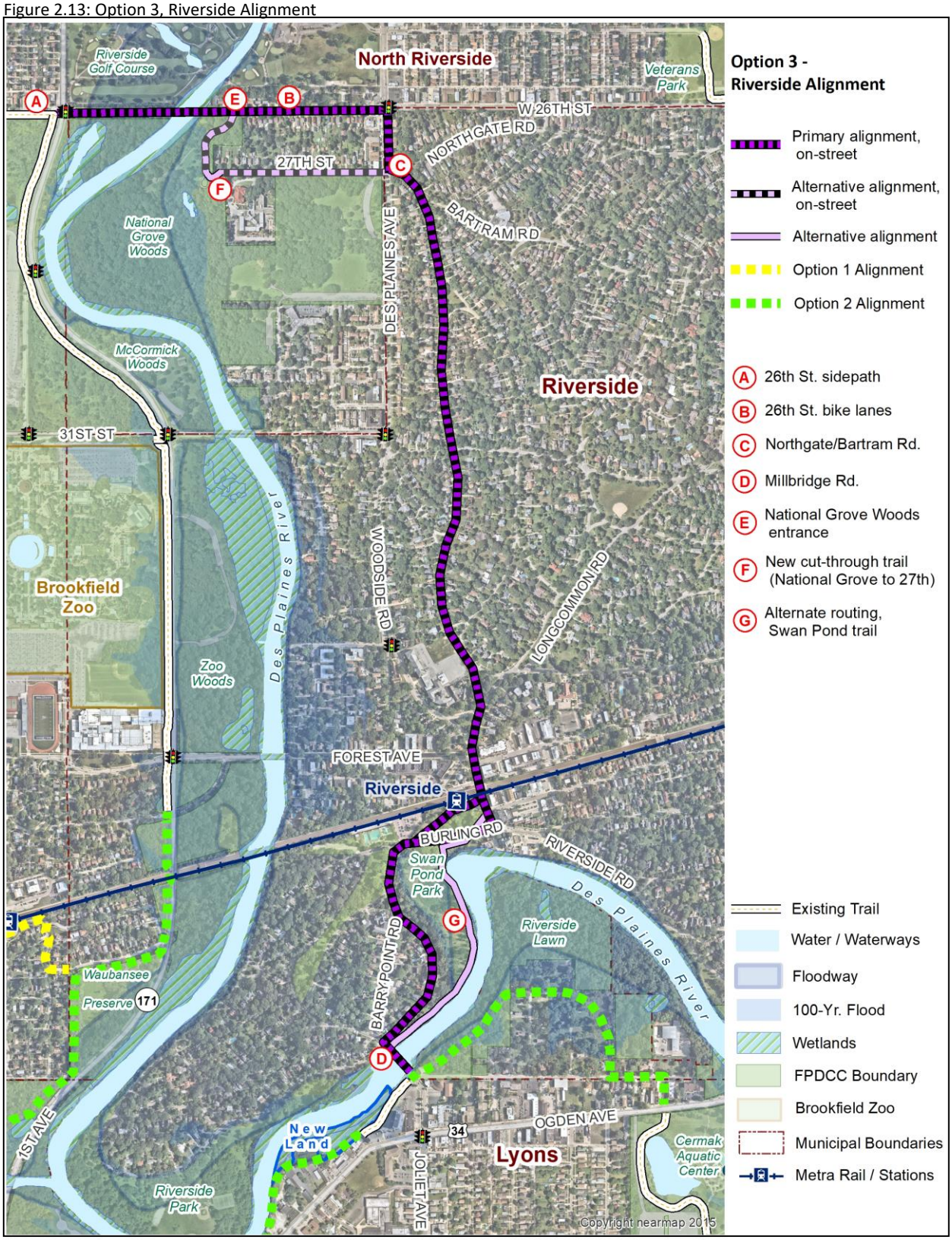
- On-going property acquisition
- Permits to build in the flood plain and mitigation of any wetland impacts

Field observations and trail user input clearly point to the challenging nature of the existing crossing at Ogden Avenue, where the Cermak-Ottawa Woods Trail heads south to the Chicago Portage Site. The four-lane, undivided state highway carries a high-volume of traffic: ADT is 16,400 automobiles, with an additional 440 trucks. Sightlines are limited due to a curve in Ogden Avenue, just east of the crossing. Although posted at 25 mph, the 85th percentile speed on this stretch of Ogden Avenue is likely to be

substantially higher, given the road's design and its function as a transition to/from higher speed stretches to the east and west. We are recommending, therefore, that crossing improvements be implemented at this location. (See Key Spot Improvements, Section 5.)

Option 3 – Riverside Alignment

Figure 2.13: Option 3, Riverside Alignment



Option 3 consists of an on-street route through the Village of Riverside, from the northern boundary (26th Street), through the central business district, to Millbridge Road, where it meets the segment described above. At its northern end, this alignment utilizes the existing sidepath (A) and bike lanes on 26th Street (B) to connect to the Salt Creek Greenway Trail.

From 26th Street, the primary alignment follows Des Plaines Avenue for one block (to Northgate/Bartram Road) (C), where it continues on local, low volume streets, to Millbridge Road (D). Local streets include Northwood Road, Akenside Road, Longcommon Road, Riverside Road, Bloomingbank Road (southbound), Burling Road (northbound), Barrypoint Road, Fairbank Road, and Millbridge Road.

Challenges for this alignment include:

- Cyclists are required to ride in mixed-traffic, higher-stress conditions (less family- and novice-friendly)
- Trail users' connection with nature/natural setting is lacking
- Existing bike route/trail signage is sub-standard and would need to be improved
- The intersection of 26th Street and Des Plaines Avenue, and the short but crucial segment between 26th Street and Northgate/Bartram Road, offer very limited opportunity to accommodate bicyclists

Alternative routing at the northern end of this alignment would avoid the challenges presented by Des Plaines Avenue/26th Street by making use of the entrance drive to the National Grove Woods (E). This alternative route calls for formalizing the existing, unimproved "use" path connecting the National Grove cul-de-sac to 27th Street (F). This alternative routing would also require improvements on 26th Street to better accommodate bicyclists turning into and out of National Grove's entrance drive. (See Key Spot Improvements, Section 5.)

Alternative routing at the southern end of the Riverside Alignment would utilize the existing path in Swan Pond Park, widening and improving it to be a multi-use trail (10'-14' wide) (G). This alternative alignment would eliminate the need for the on-street route between Burling Road and Millbridge Road and provide a more family-friendly, low-stress connection in a more natural setting.

Conclusion

Preliminary, planning-level analysis indicates that all three trail alignment options are feasible. However, in addition to identifying potential trail alignments, the scope of work for this study includes the identification of a preferred route. Evaluation of the three alignments and selection of the preferred alignment are presented below, in Section 3. Evaluation methods and criteria – which have been informed and guided by ongoing input and feedback from the core team, steering committee, and the public-at-large through the MetroQuest online survey – are applied to the three trail alignments and, where applicable, to alternate route segments. Sections 4 and 5 provide information and recommendations, respectively, on key community connector routes and on potential improvements at select spot locations along the trail and connector routes.

Section 3. Evaluation of Trail Route Options

The following criteria, grouped into five categories, were used to evaluate the overall feasibility and desirability of the three identified trail alignments (and alternate routing segments). Suggested weight were applied to each category. Ranking criteria and weights are derived from the project scope and stated goals, analysis of existing conditions and input received from core team members and key stakeholders. Application of the criteria derive from and reflect planning-level analysis and input received from the core team, steering committee, key stakeholders, and the public via the online survey and mapping exercise, the results of which are summarized below in the section on "Outreach."

The categories, criteria, and weighting use were:

User experience (22%)

- Appealing and comfortable for a wide range of cyclist types
- Family-friendliness (adults with cycling children)
- Utility and access to multiple users (inline skaters, runners, scooters, etc.)
- Degree that corridor/segment provides a natural setting and a connection to nature
- Consistency with existing regional trails

Safety (22%)

- Off-street vs. on-street
- Traffic volumes and speeds (Level of Traffic Stress) for on-street segments
- Number of arterial and other major crossings
    - At signalized locations
    - At stop-controlled locations
    - At uncontrolled locations

Connectivity / destinations (17%)

- Correlation with existing trails
- Access to key destinations
- Ease of navigation
- Directness of route

Environmental impacts (17%)

- Flood hazard
- Wetlands impact
- Environmental permitting
- Sensitive habitat impacts

Implementation (22%)

- Public support
- Overall anticipated cost (order of magnitude)
- Funding prospects
- Barriers

Outreach

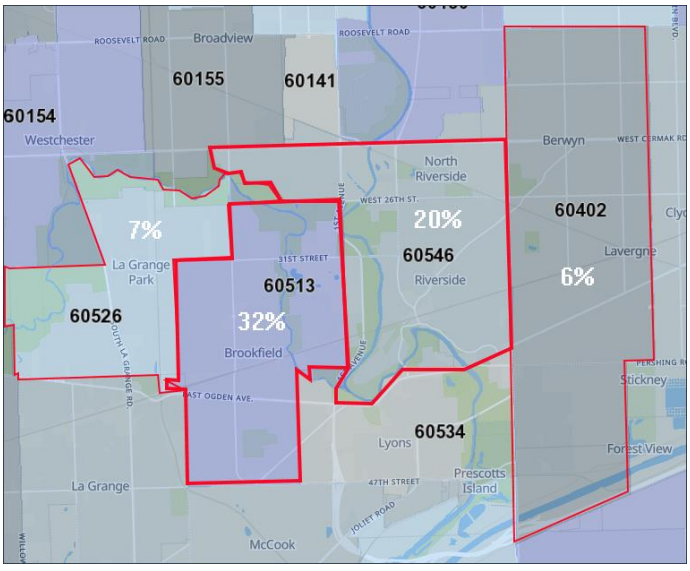
A key goal and component in the development of the Des Plaines River Trail: South Extension Planning Study was to fully and effectively engage stakeholders. Public outreach and engagement was undertaken to better understand stakeholder needs, challenges, and opportunities. Public input and outreach were crucial aspects of the planning process and fed directly into the structure and the content of this study and, above all, into the evaluation of trail alignment alternatives. Input and insights obtained through public outreach and engagement activities can also help the municipalities in the study area advance and implement proposed projects.

Ongoing Community and Stakeholder Engagement Activities

The study process included broad stakeholder engagement with numerous opportunities for community input. Specific activities included the formation of the core team and the establishment of the project steering committee; study visioning and goal identification; bicycle tour of the study-area; key stakeholder interviews; an interactive online survey that included mapping input; and ongoing coordination with potential funding programs and agencies. Community engagement activities have occurred throughout the planning process, targeting local and regional stakeholders and documenting the trail's unique strengths, challenges, and opportunities. An extensive review of the input received from outreach activities conducted during the early phase of the planning process is available in the stand-alone Existing Conditions Report. Below we provide a summary of the results of an online survey conducted in the latter phase of the project. Survey results provide valuable information and represent a key input in the evaluation of trail alignment options, especially for criteria in the "User Experience," "Connectivity/Destinations," and "Implementation" categories.

Online MetroQuest Survey

CMAP developed an interactive online survey to engage a broad audience. This online tool served to educate the community about the purpose of project and identify stakeholder priorities to address in the river trail planning study. The online survey was launched on May 8, 2019 and remained active until July 31, 2019. During this time, 1,117 people participated and provided feedback on general topics related to trails and trail use, as well potential challenges to trail routing/development, opportunities for trail routing/development, key or important destinations, and major barriers for bicycling and walking. The site consisted of survey questions and an interactive mapping element where participants to identified assets and challenges. The survey results provide a crucial element in the evaluation of trail alternatives. Combined with research and analysis of existing conditions and ongoing feedback from the FPCC, partner communities, and other key stakeholders, survey responses give us important information on preferences and priorities of trail users. Taken as a whole, the results indicate a strong preference for an

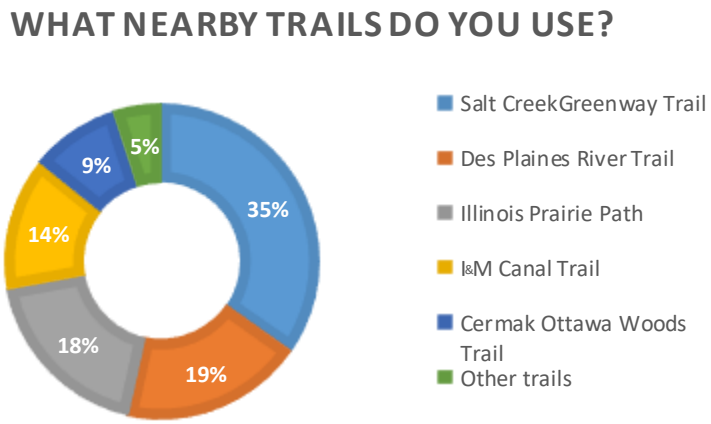


off-street alignment, paved surface, and a natural setting. These preferences point to and highlight the public's desire for overall consistency with the nearby trails, such as the Salt Creek Greenway and Cermak-Ottawa Woods Trail.

To get a better understanding of who completed the survey, participants were asked to provide information about their demographics and their trail use. The majority of the survey takers identified themselves as white (87%), male (59%), and between the ages of 41 to 60 (48%). The majority of respondents live in two Zip codes: 60513 and 60546 (52%), followed by 60526 and 60402 (13%). Very small numbers of respondents from a very large number of Zip codes comprise the remainder of responses to this survey question.

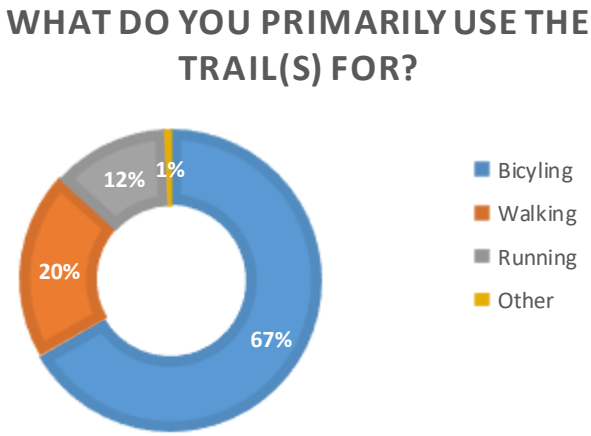
Trail Identification

Participants were asked which nearby trail they used. The results show that the Salt Creek Greenway Trail is the most popular trail among survey respondents (35 percent). However, all nearby trails show significant use or popularity. The least connected trail – the Cermak-Ottawa Woods Trail – shows the lowest usage (9 percent), probably because of its relative isolation and disconnectedness, as well as relatively low awareness or minimal knowledge of this trail's existence (which community and stakeholder interviews indicated).

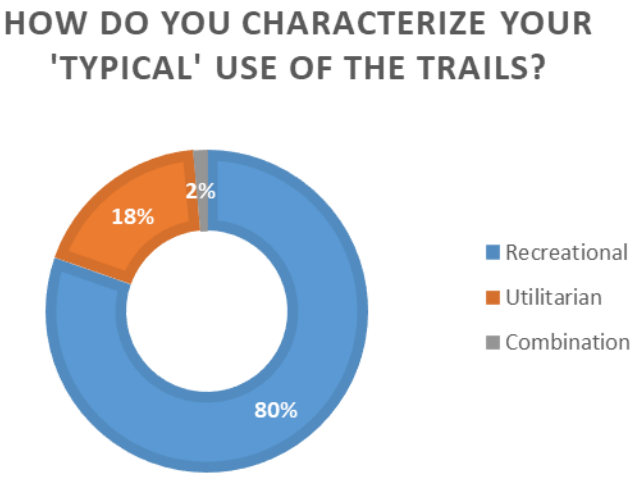


Usage

Participants were also asked what they primarily use the trail(s) for. By far, the most common use of the trails is bicycling (67 percent). However, running and walking together account for another 32 percent of responses to this question. "Other" uses (which could include roller-blading, scootering, skateboarding, etc.) received only 8 responses, while equestrian usage had a single response, adding up, together, to less than 1 percent of the 1,094 responses to this question.

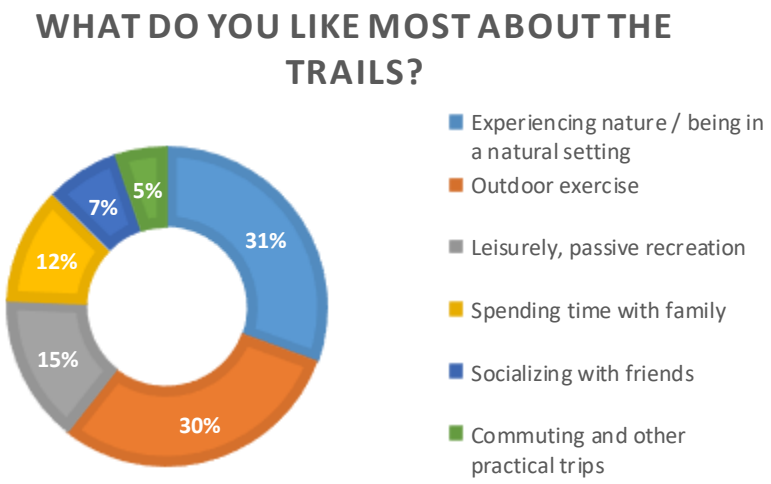


Participants characterized their 'typical' use of the trails as recreational by a large margin (80 percent). However, when combined, those who indicated that they used the trails primarily for "utilitarian" or as combination of utilitarian and recreational purposes was 20 percent of respondents, which is substantial. For perspective, it can be noted that commute trips – the most utilitarian of all trip types – are estimated to be about 20 percent of all trips that U.S. residents make.

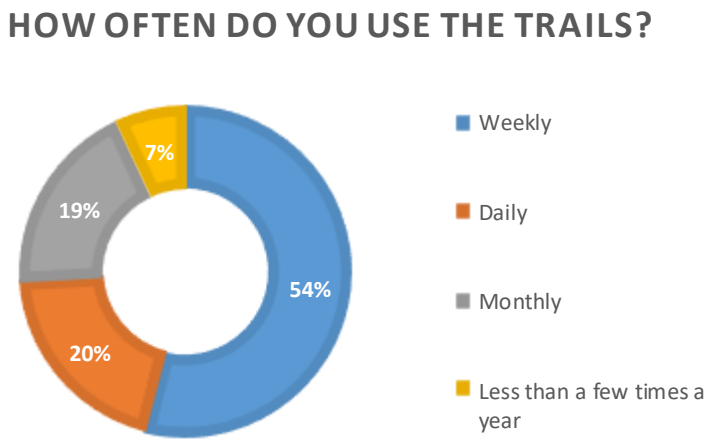


Benefits

When asked what they liked most about the trails, the majority of participants answered, "Experiencing nature / being in a natural setting," with "Outdoor exercise" in a very close second place. This fact reflects, and aligns with, the recreational purpose of most trips (as indicated in the previous question). Nearly 20 percent of respondents indicated that the opportunity for socializing (with friends and family) constitutes a primary attraction and appeal of the trails. Approximately 14 percent indicated that they value the opportunity for leisurely, passive recreation, which trails provide. This corresponds roughly to those who stated that their primary trail use was for walking (19 percent). While the health benefits that walking provides are very well-documented by researchers, this may not be understood by the general public, who may consider walking to be a passive and leisurely form of activity.

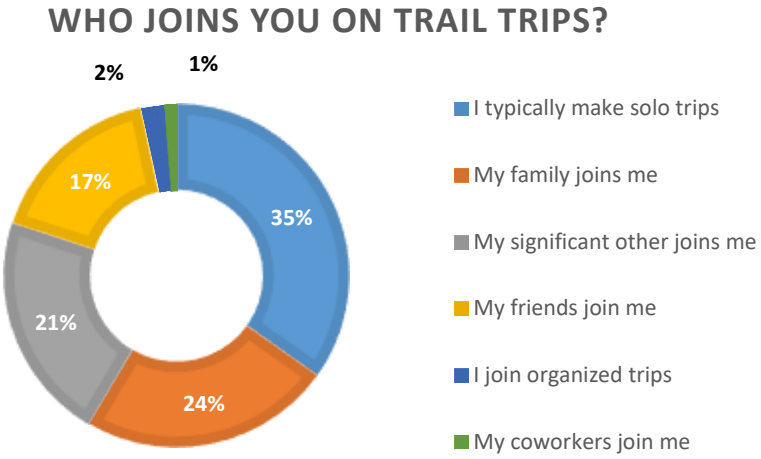


Survey respondents indicated a high-level or frequent use of the trails, with 54 percent of the 1,055 responses indicating that they use the trails on a weekly basis, and 20 percent that they used the trails on a daily basis. The high utilization rate is likely the result of the multiple factors, including the proximity of the trails; the experience they offer, in terms both of a connection to nature and the opportunity for socializing; and – when combined with the bicycle – their function and effectiveness as transportation infrastructure. Only 7 percent of respondents indicated that they use the trails less than a few times a year.

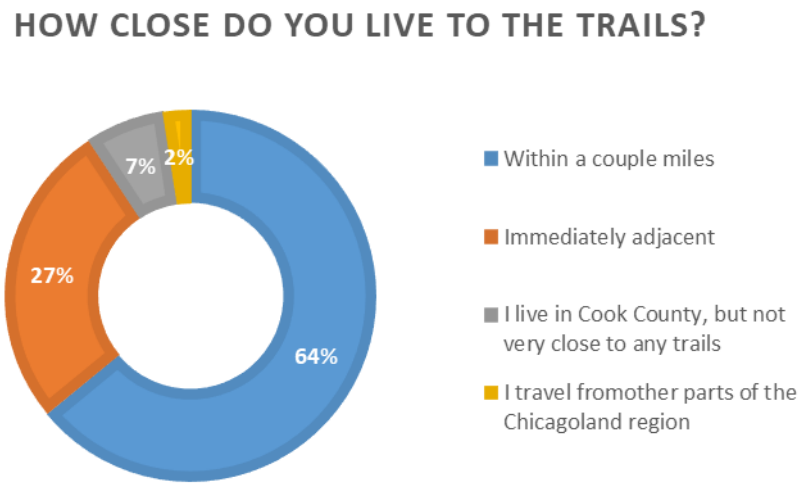


Trips

When participants were asked who joined them on the trail, the highest percentage of respondents indicated that they typically made solo trips. However, when we combine the other categories (which all involve trips with others – spouses, family, friends, co-workers, and organized trips), they add up to the large majority (65 percent) of the responses, which supports the finding that trails are used and valued as a means of socializing.

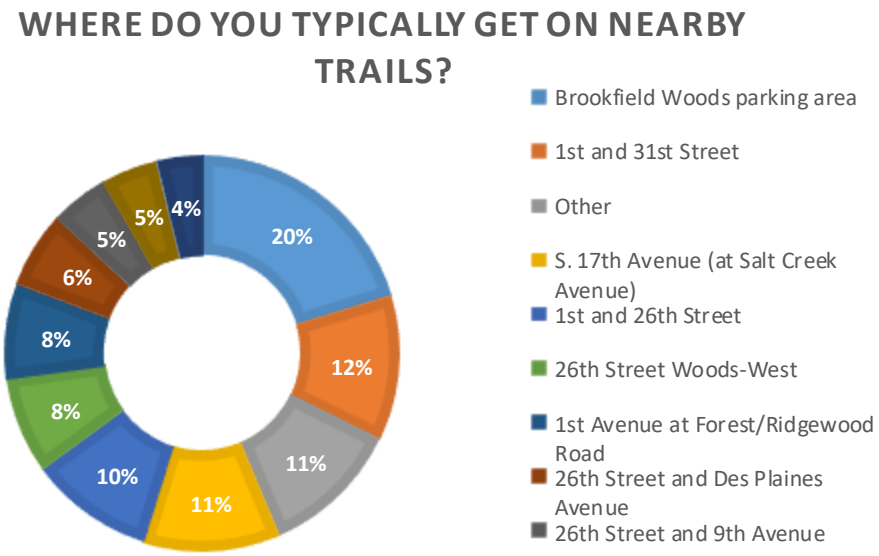


Approximately 91 percent of respondents indicated that they live either immediately adjacent to or "within a couple of miles" of the trails. This finding strongly supports the need for safe, comfortable, and convenient community connections to the trails. Well-designed and maintained on-street bikeways (bike lanes, bicycle boulevards, marked shared lanes, etc.) and complete, connected sidewalks (for pedestrians) represent the best opportunity for creating these important connections.



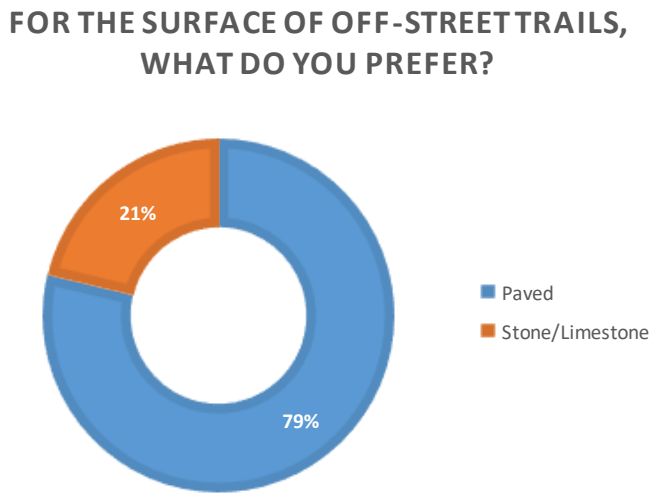
Access

Participants were asked where they typically get on nearby trails. Points of access for the trails is spread relatively evenly among various locations within and near the study area, indicating the need for multiple, frequent trailheads and suggesting that trail users value convenience and practicality when going for a bike ride, walk, or run on nearby trails. The Brookfield Woods parking lot – which is currently difficult to reach by bicycle or on foot from the adjacent communities, due to a lack of sidewalks or off-street bikeways along 31st Street and few opportunities for safe crossings – sees the highest use among the eleven options offered in this survey question. The fact that a parking



lot is the most popular point of access indicates the need for improved non-motorized access to this and other trailheads. Community and stakeholder input strongly supports this finding.

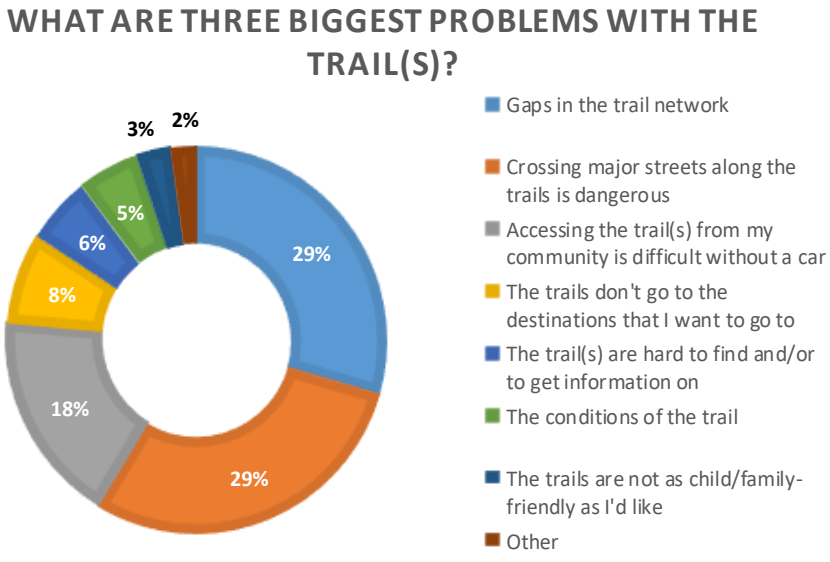
Participants were asked their surface preference for off-street trail. Nearly 80% of respondents (736 of 935 total) indicated that they preferred a paved trail surface, over crushed limestone. This reflects the popularity of bicycling on the trails, as well as the condition/nature of nearby existing trails, all or most of which are paved. However, the popularity of the trails for family outings (often with children), and for social rides with cyclists with different skill and experience levels would typically lead to a preference for paved trails, which are generally easier for children and less confident riders to navigate and which make for quieter riding, which supports conversation and social interaction.



Issues

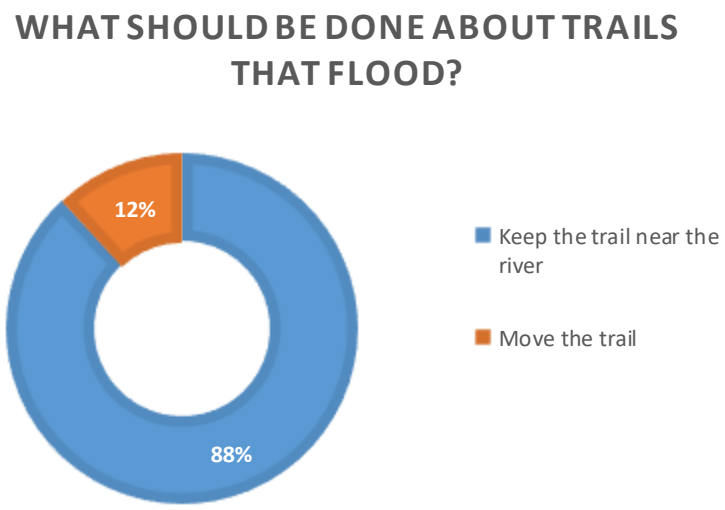
Next, participants were asked what they felt were the three biggest problems with the trails. Their responses were as follows:

1. Gaps in the trail network (29 percent of responses)
2. Dangers associated with crossing major streets (29 percent)
3. Accessing the trails without a car (18 percent)



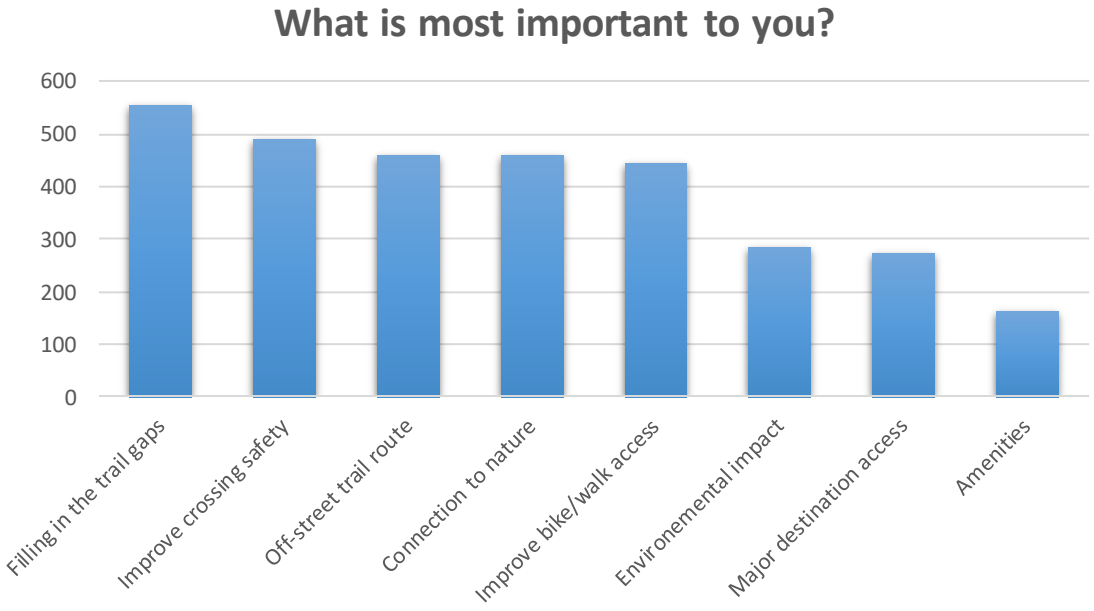
The responses strongly support the primary goal of the study, which is to find a feasible alignment to fill the gap in the trail system between the Salt Creek Greenway Trail and the Cermak-Ottawa Woods Trail. It also indicates the need to improve safety at the crossings of major, high-speed, high-volume arterial roads and to improve bicycle and pedestrian access at important trailheads and access points, especially Brookfield Woods and the Zoo.

Participants were also asked what should be done about the trails that flood. Survey responses show a strong preference (88%) for keeping the trail as near the river in a natural setting, and as much "off-street," as possible – even when that would mean occasional flooding and trail closures. Trail routes that include on-street segments, where users must ride in "mixed traffic" conditions, sharing the road with automobiles were much less popular (12%). While compromises may be required due to physical barriers, environmental impacts, and high costs, this finding strongly supports project objectives of, 1) maximizing the amount of off-street route, 2) leveraging existing off-street facilities, and 3) maintaining as "family-friendly" an alignment as possible.



Priorities

Participants were asked to rank which improvements, within the study area, were most important to them. The chart below illustrates participant's top five priorities. Over 500 of the over 1,000 participants indicated that "Filling in Trail Gaps", was their top priority.



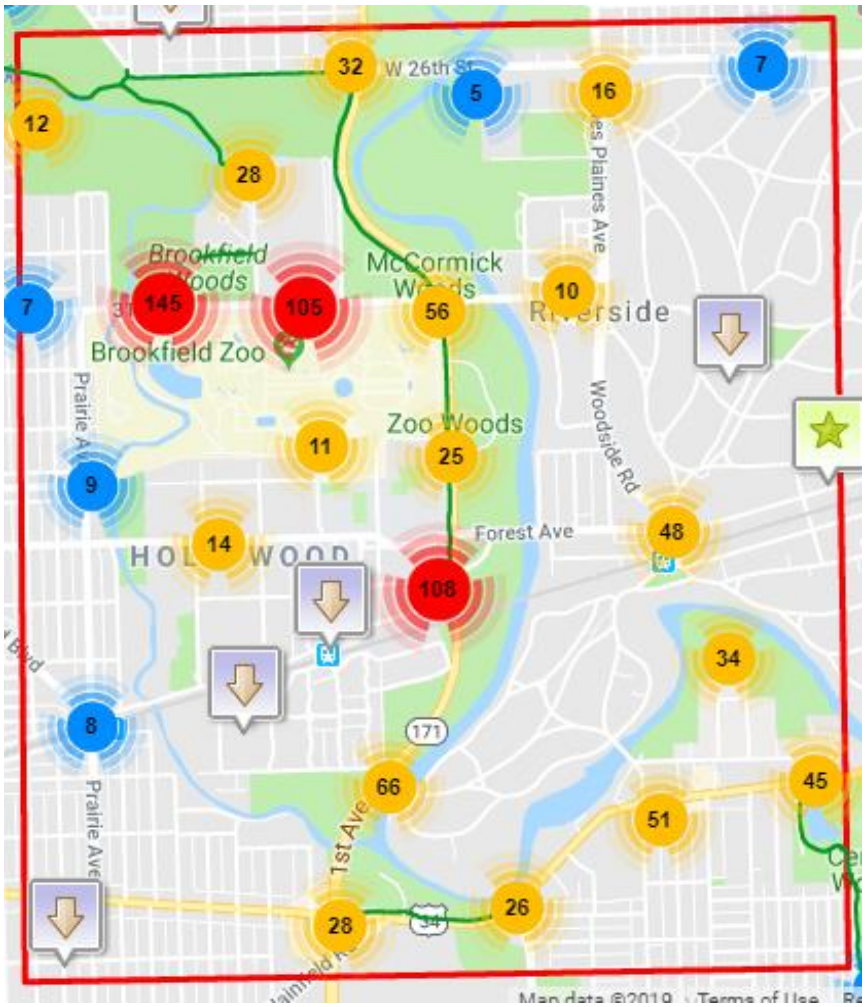
Mapping Exercise

Next, survey takers were shown a map of the study area and were asked to identify challenges and opportunities. A total of 1,323 markers were placed on the map with 688 "Challenges," 432 "Opportunities," and 203 "Key Destinations."

Challenges

The highest concentration of "Challenges" markers within the study area were placed in the following areas:

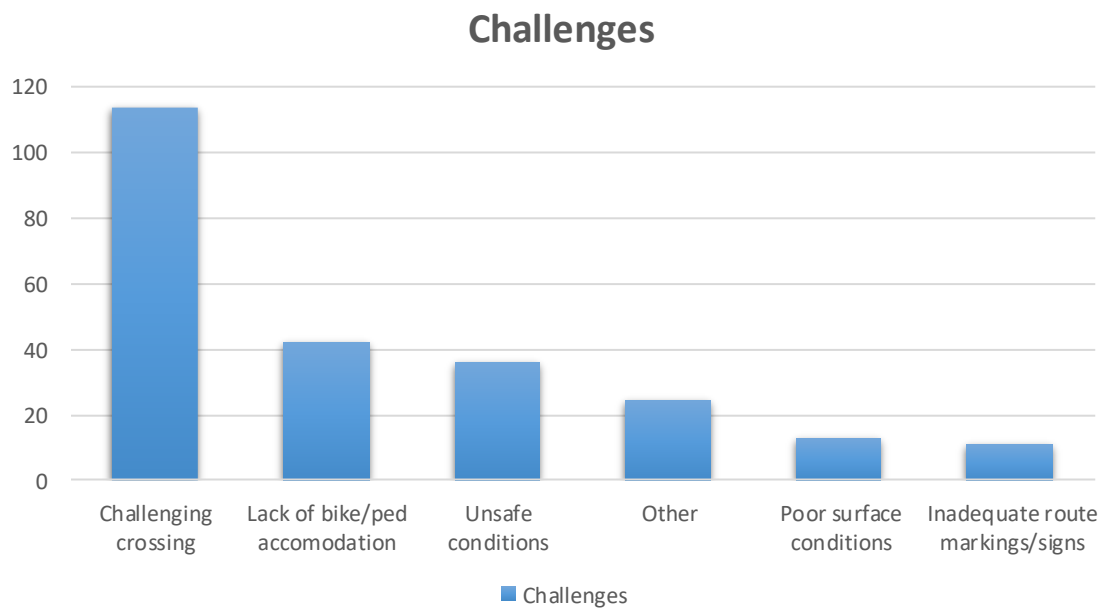
1. Along 31st St., between Prairie Ave. and 1st Ave.
2. Along 1st Ave., from Forest Ave. to Ogden Ave.
3. Along Ogden Ave., especially at Shakespeare (where the Cermak-Ottawa Woods Trail begins) and near Joliet Ave.



In addition, large numbers of "Challenges" markers were placed at the intersections of Ogden and 1st Ave., 26th St. and Des Plaines Ave., and 26th St. and 1St Ave. These locations correspond to areas or corridors where improved bicycle and pedestrian connections and safety improvements are desired and needed (as the markers' comments make clear).

The top three “Challenges” for survey respondents were (in order):

1. Challenging crossing
2. Lack of bicycle and/or pedestrian accommodation
3. Unsafe conditions



These “Challenges” / types of challenges clearly point to safety as the primary concern of survey respondents.

> *“Connect Prairie Ave to 1st Ave Along 31st with a trail! … I have driven the .25 miles to access the woods with bikes, because I don’t feel safe biking with a child on the street.”*

> *“Very difficult crossing here at Ogden [and Shakespeare]. I recommend a signal activated by pedestrians/cyclists requiring a stop of traffic. This should be patrolled regularly to ensure compliance.”*

Opportunities

The locations of "Opportunities" markers correspond, generally, to the "Challenges" markers, highlighting the following areas:

1. 31st St. between Prairie Ave. and 1st Ave.
2. 1st Ave. between Forest Ave. and Ogden Ave.

These were corridors where survey participants see opportunities for key trail, community bicycle, and pedestrian route connections. Downtown Riverside and the wooded area within Riverside Lawn also received relatively high numbers of "Opportunity" markers (the former as an important destination, and the latter as an area where a trail could be constructed).

> *"It would be nice to have this family park playground and nature area connect directly to the Salt Creek trail from the West or South. When I bike there with my kids (ages 5 and 7) we always make the connection over the grassy field from the West side. I also have seen other people do the same. "*

> *"It would be nice to be able to walk to the zoo, especially considering how expensive parking is, but there are no sidewalks or paths along 31st. "*

Key Destinations

The highest concentration of "Key Destination" markers were located at Brookfield Zoo (the Zoo itself, and at the north entrance parking and pay area). Other areas of high concentration of "Key Destination" markers were downtown Riverside and the Hoffman Tower area. Cermak Aquatic Center and Brookfield Woods trailhead were also identified as "Key Destinations."

> *"Downtown Riverside has great stops for food and rest. There is no easy way to access the town center from the trails."*

Conclusion

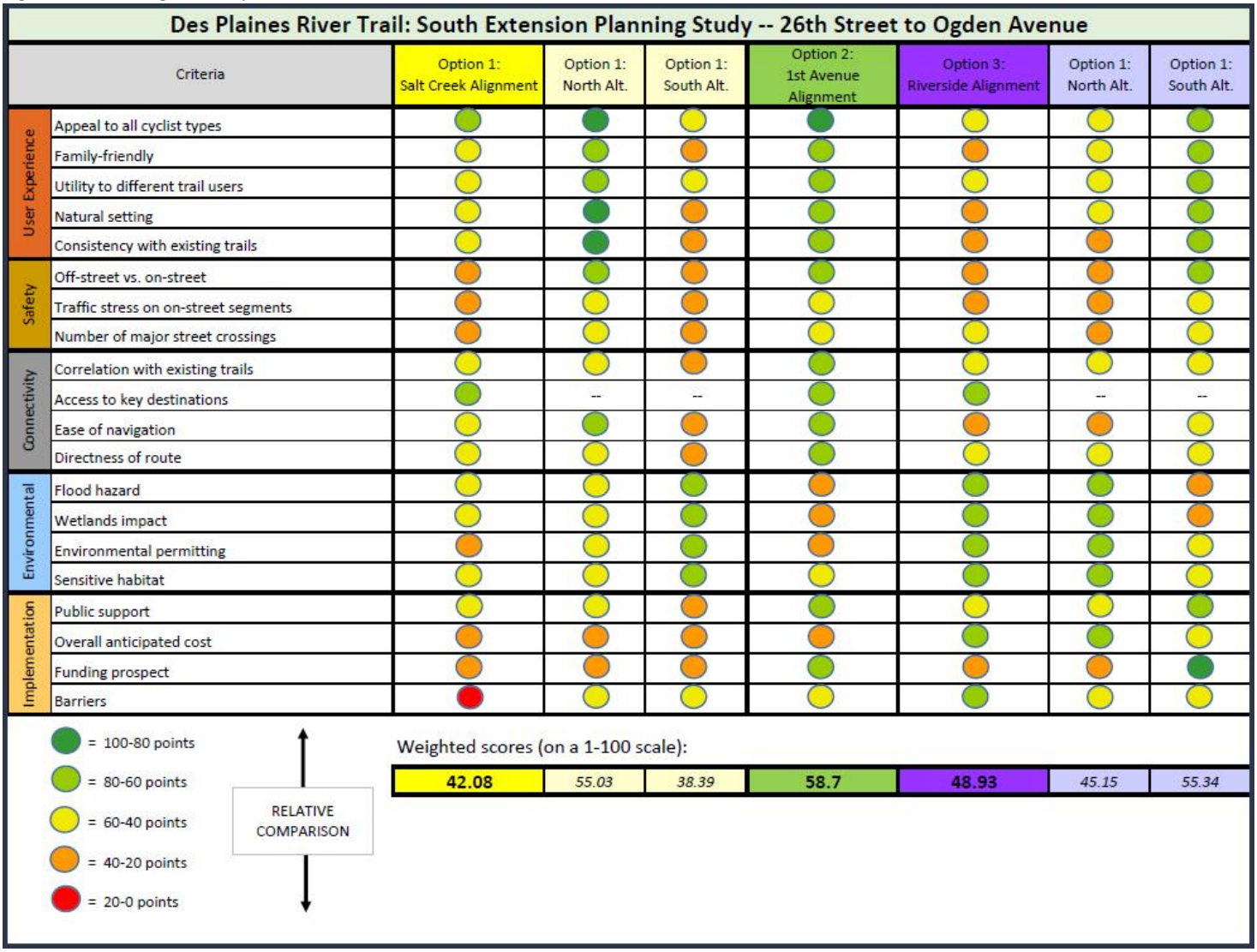
Overall, the input received through the map markers and associated comments – while extremely varied, diverse, and highly qualitative – nevertheless clearly matches and supports the substance and

ideas of the responses to the survey questions. Both correspond to and reinforce key project goals of creating a continuous, connected, and safe trail between the Salt Creek Greenway Trail and the Cermak-Ottawa Woods Trail, which is, to the greatest extent possible, off-street, within green areas, and which includes improved, safe crossings of intersecting roads.

Trail Options Evaluation

The evaluation indicates that Option 2, the 1st Avenue Alignment, would best meet project goals and objectives as outlined in the scope of work and further refined and bolstered through the study process, which included extensive research, analysis, community outreach, and stakeholder dialogue. While further, more detailed study could potentially reveal facts or issues not currently known or accounted for in this report and the evaluation of potential trail alignments, information available at this time indicates that the preferred alternative is Option 2, 1st Avenue Alignment.

Figure 5.1: Trail Alignment Options Evaluation



The chart in Figure 5.1 presents results of the evaluation of the three trail options, and alternate route segments, according to the proposed criteria. The evaluation is based upon planning-level analysis of existing conditions and on input received from core team members, the project steering committee, key stakeholders, and the general public. Most of the criteria are qualitative in nature. Results should therefore be understood as "proportional" or "order of magnitude" in nature. That is, each trail alignment option is ranked not only in relation to existing conditions and facts (when available), but also in relation to other alignment alternatives. Though we have assigned numerical scores to individual criteria and summed these, based upon the proposed weighting, for each trail option, the scores should be understood to be "relative," and are not strictly or rigorously derived.

Next Steps / Implementation

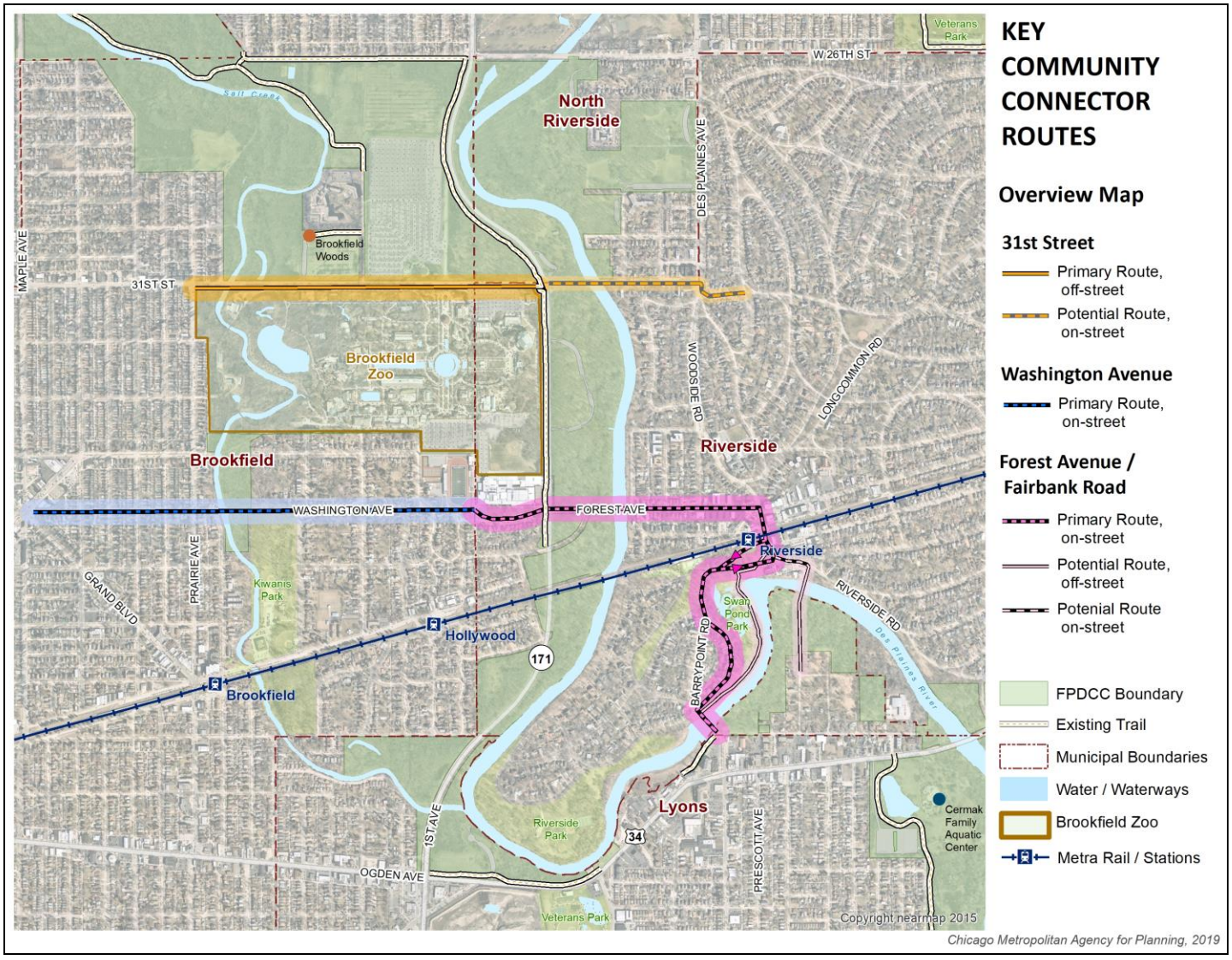
The core team has begun initial conversations on potential collaborative, multi-agency efforts to advance projects identified through the study process toward implementation. Conversations have focused on potential Phase 1 funding for the preferred trail alignment and key community connector routes. With planning-level cost estimates (provided by a project steering committee member who is also a professional engineer specializing in trail development), the core team has discussed the possibility of applying to the Central Council of Mayors Surface Transportation Program (STP) and/or Cook County Invest in Cook (IIC) program to help fund Phase 1. Topics of these ongoing discussions include: identification of which municipality would serve as "lead agency" for an STP application and issue the RFQ/RFP for the Phase 1 study; how the required commitment for a local match (20%) could best be made; cost-sharing among partner communities and the FPCC; and what MOUs or intergovernmental agreements will be needed.

Section 4. Community Connector Routes

Introduction

In addition to potential Des Plaines River trail alignments, this study identifies key community connector routes, with planning-level recommendations for route improvements. These routes provide local access to proposed trail alignments and nearby community destinations. Three key community connector routes have been identified: two in Brookfield (Washington Street and 31st Street) and one in Riverside (Forest Avenue). Two of the three connections will consist, largely, of on-street bikeways on local roads. Implementation, therefore, will likely be the responsibility of individual municipalities, in partnership with IDOT and/or other roadway agencies.

Figure 4.1: Key Community Connector Routes – Overview Map



31st Street Community Connector Route (Brookfield)

Brookfield's Active Transportation Plan and Comprehensive Plan identify 31st Street as a key east-west bicycle and pedestrian route, which would provide a crucial connection to the Brookfield Woods picnic area and trailhead, Brookfield Zoo's North Entrance, and the recently constructed 1st Avenue sidepath. The 1st Avenue Trail Alignment (Option 2) would extend south to Ogden Avenue. Both plans envision 31st Street as a multimodal corridor, supporting a mix of residential and neighborhood-scale commercial uses, and recommend the preservation and dedication of a right-of-way for the construction of a sidepath, sidewalks, and bus shelters. This study fully supports this vision, and recommends that 31st Street be developed as a key community connector route for bicyclists and pedestrians.

Analysis of existing roadway geometry, traffic characteristics, and the network function of 31st Street within the study area suggest that an on-street bikeway would not be feasible. Traffic speeds and volumes, combined with the narrow, undivided, four-lane cross-section (approximately 40' wide) preclude safe, on-street accommodation. However, planning-level analysis of available right-of-way and roadside conditions indicate that bicycle and/or pedestrian accommodation on the north and/or the south side of 31st Street is feasible. The south side of 31st Street appears to provide the best opportunity for a shared-use path. This alignment would take advantage of existing bicycle accommodation on the bridge carrying 31st Street over Salt Creek, where a 10'-11' sidepath, protected by a barrier wall, was included as part of bridge replacement in 2001-2002. The north side of the bridge has a 7' sidewalk, which accommodates pedestrians but does not meet design standards for bikeways or shared-use paths. See Figure 2.3.

Locating the shared-use path on the south side of 31st Street would also avoid the narrow ROW on the north side, where an existing underpass extends under 31st Street from the Zoo's north parking lot and pay-kiosk area to the Zoo grounds proper. Constructing a trail here, along the north side of 31st Street, would likely entail major and costly engineering to ensure the stability of structures and the safety of users. A sidepath on the south side of 31st Street would provide direct access to the at-grade entrance to the Zoo.

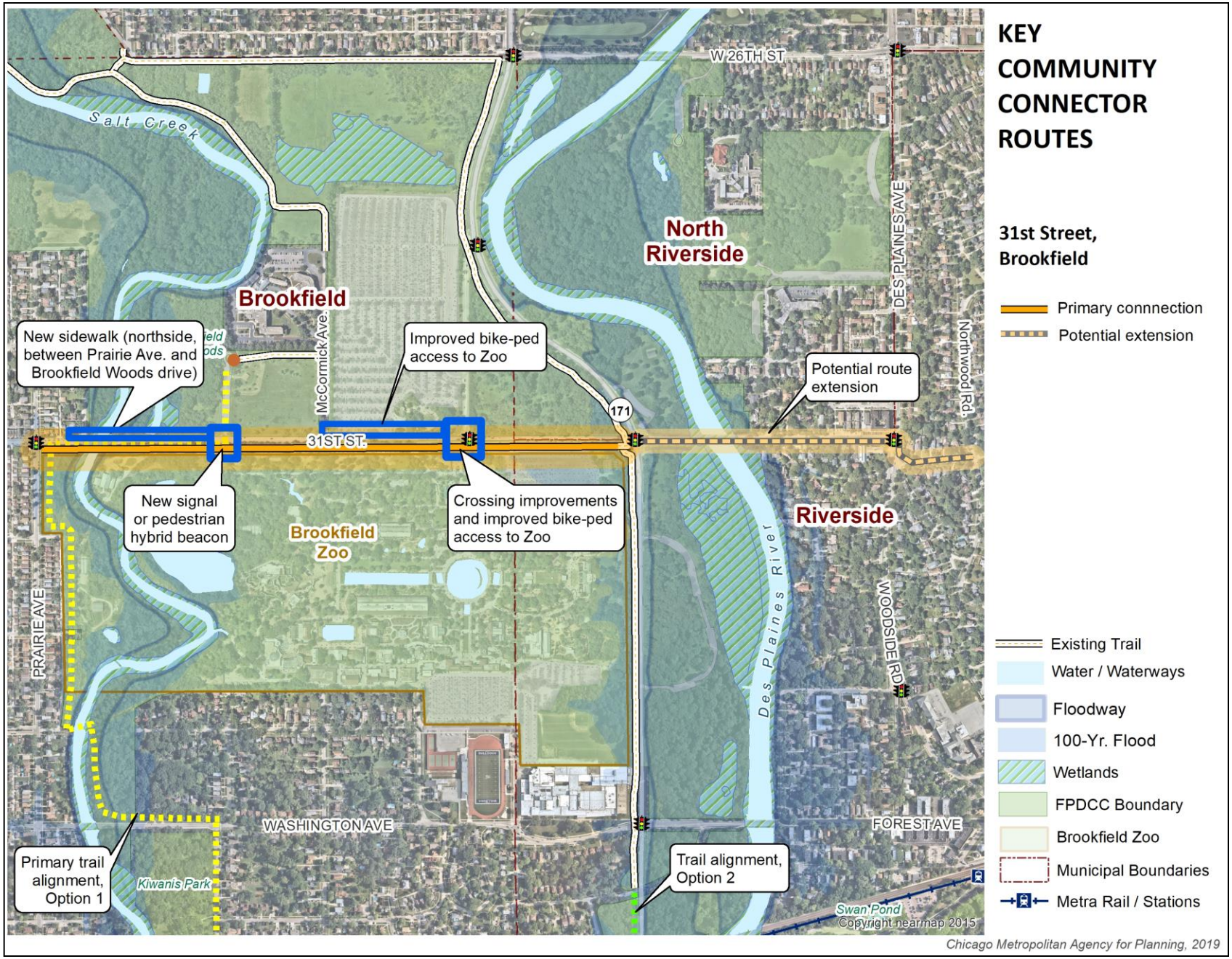
Figure 4.2: Pinch-point at Zoo underpass under 31st Street

Source: Nearmap.com

The Brookfield Woods trailhead and the main entrance and ticket booths for the Zoo are located on the north side of 31st Street and currently accessible from 31st Street only by car. In order to improve bicycle and pedestrian access to the trailhead and the Zoo, we recommend improvements at several spots along 31st Street. These are described and illustrated, along with other spot improvements, in Section 4.

While further engineering is needed to determine precise alignment, a sidepath on the south side of 31st Street, between Prairie Avenue and 1st Avenue, is feasible and would provide an important bicycle and pedestrian connection. Community leaders and residents in both Brookfield and Riverside have repeatedly called for such a connection in plans, policies, and programs.

Figure 4.3: 31st Street Community Connector Route



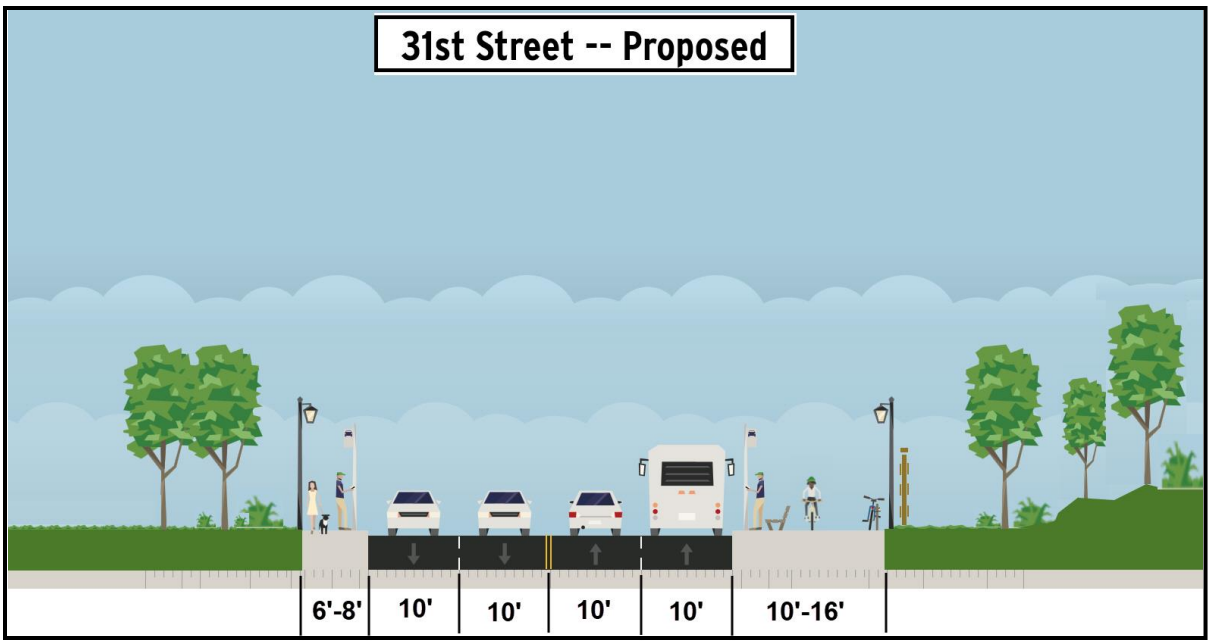
Extending the 31st Street community connector route east to Northwood Road in the Village of Riverside – either as an on- or off-street facility – would tie the proposed community connector route into Riverside's bikeway network and provide more direct access to the Zoo for residents living east of the Des Plaines River. Traffic volumes on the segment of 31st Street between 1st Avenue and Des Plaines Avenue (ADT: 12,300) suggest that a road reconfiguration, from 4 lanes to 3 lanes (with a two-way center left-turn lane), may be possible. Combined with traffic calming measures, this reconfiguration would allow for the installation of bike lanes. However, a detailed engineering study would be required to assess feasibility of this reconfiguration, or of an off-street facility.

In addition to a sidepath along the south side of 31st between Prairie Avenue and 1st Avenue, we recommend a sidewalk along the north side between Forest Avenue and the entrance drive to the Brookfield Woods parking lot and trailhead. This pedestrian connection is important, in and of itself. However, it becomes even more crucial if the recommendation for a new signal or pedestrian hybrid beacon at the entrance drive to the Brookfield Woods or, alternatively, at McCormick Avenue, is not implemented. See the Section 5, Key Spot Improvements, for more detail on the recommendation for a new signal or beacon.

Figure 4.4: 31st Street, near Brookfield Woods Drive

Source: Nearmap.com

Figure 4.5: 31st Street, proposed cross-section



Source: Streetmix.net

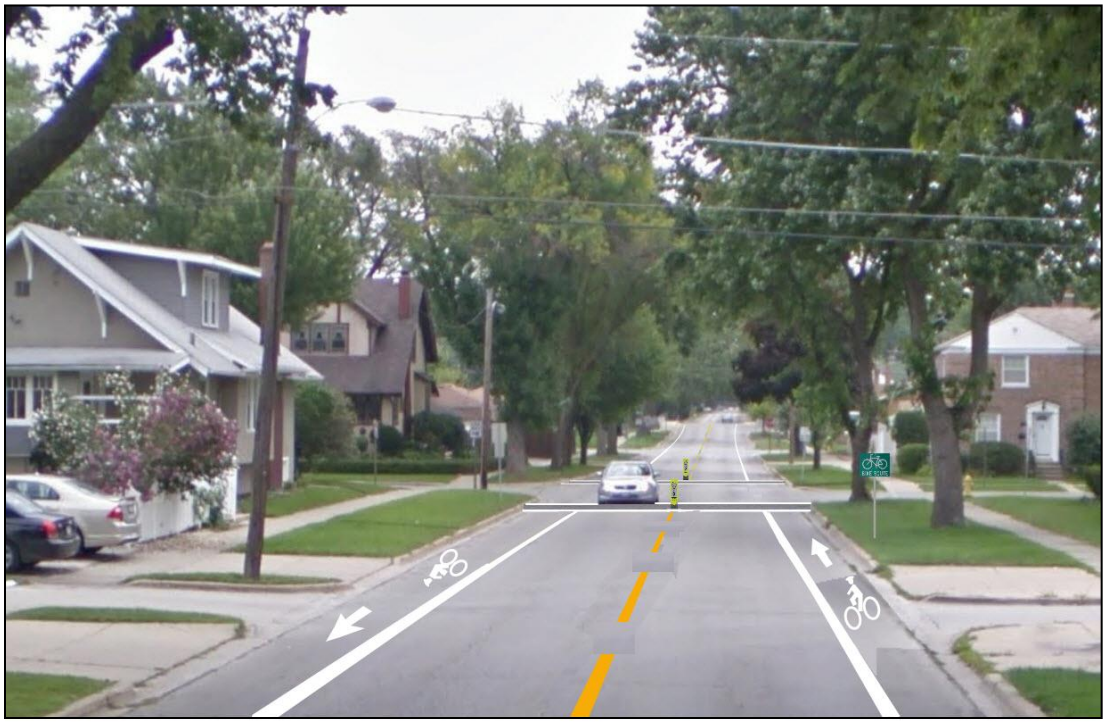
Washington Avenue Community Connector Route (Brookfield)

The Brookfield Active Transportation Plan identifies Washington Avenue as a key east-west bicycle route. In discussions undertaken as part of this study, the Village confirmed that that -- in conjunction with the Arden Avenue bicycle boulevard -- Washington Avenue is a key community connector route for bicyclists to access for the Des Plaines River / Salt Creek Greenway Trail and other nearby destinations. The Village stated that they plan to pursue implementation of bike lanes on Washington Avenue. This study supports this goal and recommends that the Village add striped bicycle lanes on Washington Avenue.

Washington Avenue spans the Village and connects important destinations, including Eight Corners, Kiwanis Park (and, adjacent to the park, the Arden Avenue bicycle boulevard), Hollywood Elementary, Riverside-Brookfield High School, the 1st Avenue sidepath, and downtown Riverside. To the west, Washington Avenue provides access over freight rail lines and provides a connection (as Harding Avenue) to La Grange Park. Despite its identification as an important bike route, Washington Avenue currently lacks bicycle facilities. In its current configuration, Washington Avenue has two 15-foot wide travel lanes (one in each direction), with no on-street parking. The posted speed is 25 mph. ADT is 4,600. Roadway width, function, and operational characteristics are consistent with the installation of on-street bicycle facilities -- specifically, bike lanes. Minimum recommended width for bike lanes is 5 feet. However, widening the bike lanes on Washington Avenue to 5.5 feet, with 9.5 foot travel lanes, would help to further reduce speeding and increase safety for all roadway users.

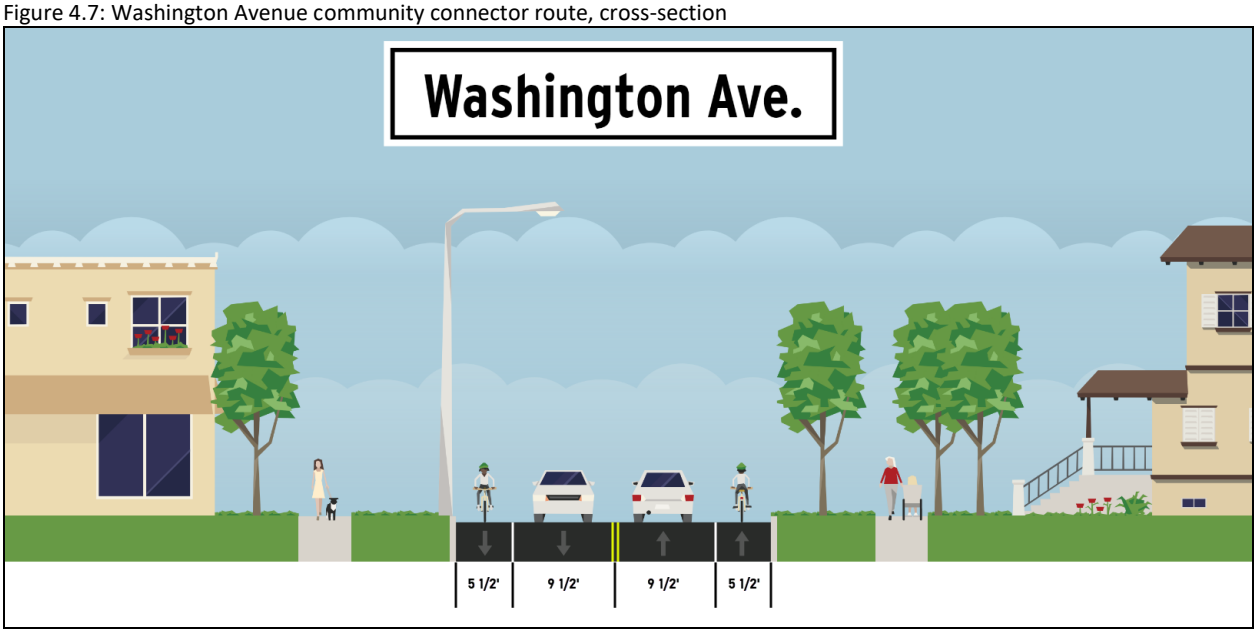
In addition to bicycle lanes, we recommend that the Village install bicycle wayfinding signs to help cyclists navigate and to increase driver awareness of the presence of bicyclists. Other traffic calming measures and safety treatments -- such as high-visibility crosswalks, in-street “stop for pedestrians in the crosswalk” signs, installation of mini traffic circles, and lower posted speed limits -- may further increase the safety and comfort of pedestrians and cyclists, as well as motorists, on Washington Avenue.

Figure 4.6: Washington Avenue community connector route, concept



Source: Google Streetview (altered)

Figure 4.7: Washington Avenue community connector route, cross-section



Source: www.streetmix.net

Forest Avenue Community Connector Route (Riverside)

The Village of Riverside recently identified a preferred bikeway route, linking existing regional trails on Village's western and southern borders through its downtown core. The Village shared – and requested support for – this proposed "connector route" in a letter to Cook County Commissioner Jeffery Tobolski, dated January 11, 2018. Improvements along this route -- including traffic calming and on-street bikeway markings -- have already been constructed and are slated as part of an upcoming resurfacing project.

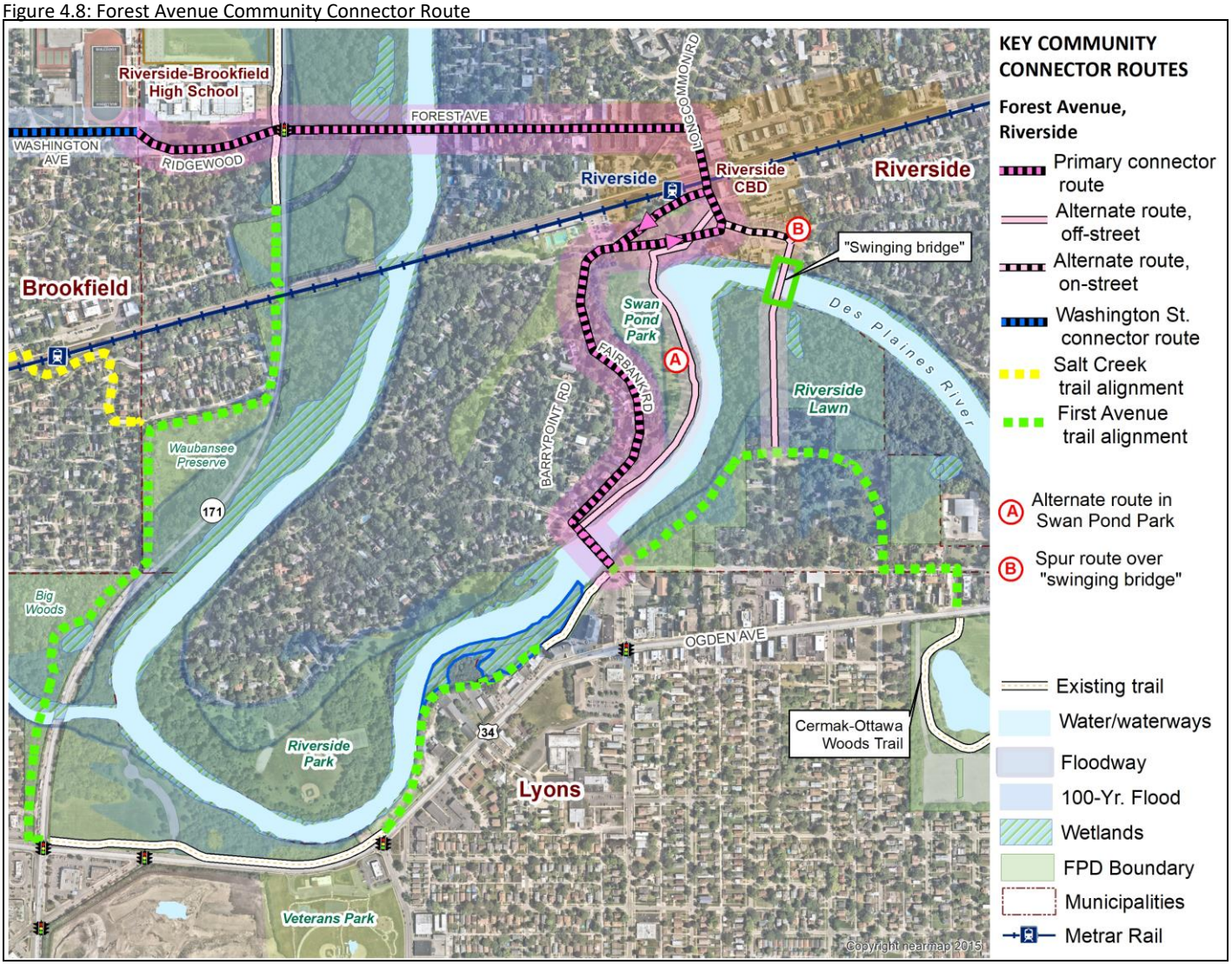
At its western end, the route begins at the existing sidepath on 1st Avenue (at Ridgewood Road, near Riverside-Brookfield High School). Here, the route connects directly to the Village of Brookfield's planned Washington Avenue bike lanes (described above). Between Golf Road and 1st Avenue, on-street shared lane markings (combined with bicycle signage) or, if feasible, a shared use path through the open space in front of Riverside-Brookfield High School could be installed.

From 1st Avenue, the route continues east along Forest Avenue into downtown Riverside, where it crosses the BNSF rail line on Riverside Road. From there, it runs south along Bloomingbank/Burling, Barrypoint, and Fairbank Roads to Millbridge Road, where, in the Village of Lyons, the 1st Avenue alignment of the Des Plaines River Trail / Salt Creek Greenway continues east through Riverside Lawn to meet the Cermak-Ottawa Woods Trail at Ogden Avenue. This segment of the route would also consist of shared lane markings, combined with bicycle wayfinding signage and traffic calming treatments. The Village has in fact already begun installation of shared lane markings on Forest Avenue, between 1st Avenue and East Avenue/Longcommon Road, as part of a resurfacing project. In addition, traffic calming treatments and pedestrian improvements in the area of the Metra station have recently been completed.

An alternative alignment for the southern segment between downtown Riverside and Millbridge Road would entail the improvement and widening of the existing 4-6 foot sidewalk in Swan Pond Park to shared use path standards (10-12 feet in width, with an accessible surface material). This alignment has the advantage of creating a low-stress, off-street route -- although sections to the north would remain on-street, mixed traffic conditions (A).

A supplement or spur to the primary Riverside community connector route leads from downtown Riverside (along Riverside Road) to the pedestrian "Swinging Bridge" over the Des Plaines River (B). Given the width of the bridge, cyclists would be required to dismount and walk their bikes across. From there, an existing unofficial/informal trail through FPCC property leads to Stanley Avenue and 39th Street. These two routes (the primary route from downtown Riverside to Millbridge Rd. and the alternative route from downtown to the Swinging Bridge) are not mutually exclusive and could both be signed and marked as community bike routes that provide access both to downtown Riverside and to the Des Plaines River / Salt Creek Greenway Trail. The primary Riverside community connector route includes segments of all three of the Village's designated bicycle routes (Olmsted, Wright, and Palmer Routes) and will help integrate the Village bikeway network and connect it to the larger regional trail system.

Figure 4.8: Forest Avenue Community Connector Route

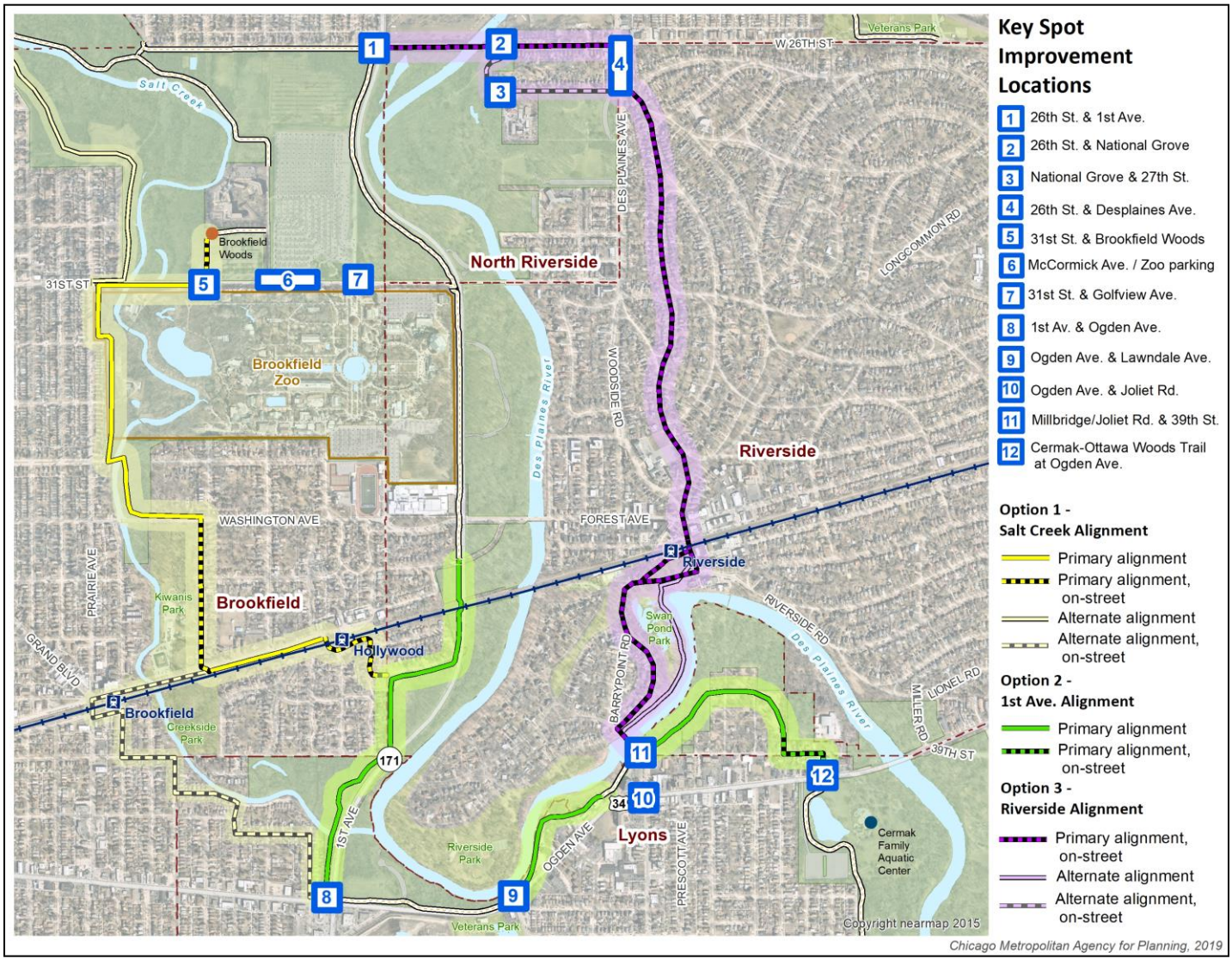


Section 5. Key Spot Improvements

Introduction

Major steps in the development of this study report – including existing conditions analysis, field surveys, and stakeholder and community outreach – have allowed the project team to identify select locations along the proposed trail and community connector routes where more detailed engineering study should be undertaken, with the goal of increasing the safety and comfort of bicyclists and pedestrians using the existing and proposed bikeway, pedestrian, and shared-use path networks. Challenging trail crossings, intersections, and other specific points of conflict are identified and planning-level recommendations for infrastructure improvements and treatments are provided. Further engineering analysis is needed to determine feasibility and design details. All spot location design concepts are for illustrative purposes only.

Figure 5.1: Key Spot Improvement Locations – Overview Map



1 – 26th Street and 1st Avenue

The intersection of 26th Street and 1st Avenue marks the transition between bike lanes on 26th Street (between 1st Avenue and Des Plaines Avenue) and sidepaths along 1st Avenue and 26th Street, which lead to the Riverside-Brookfield High School and the Salt Creek Greenway Trail, respectively. 26th Street is, per Strava Heatmap data, a popular east-west bike route, as are the sidepaths.

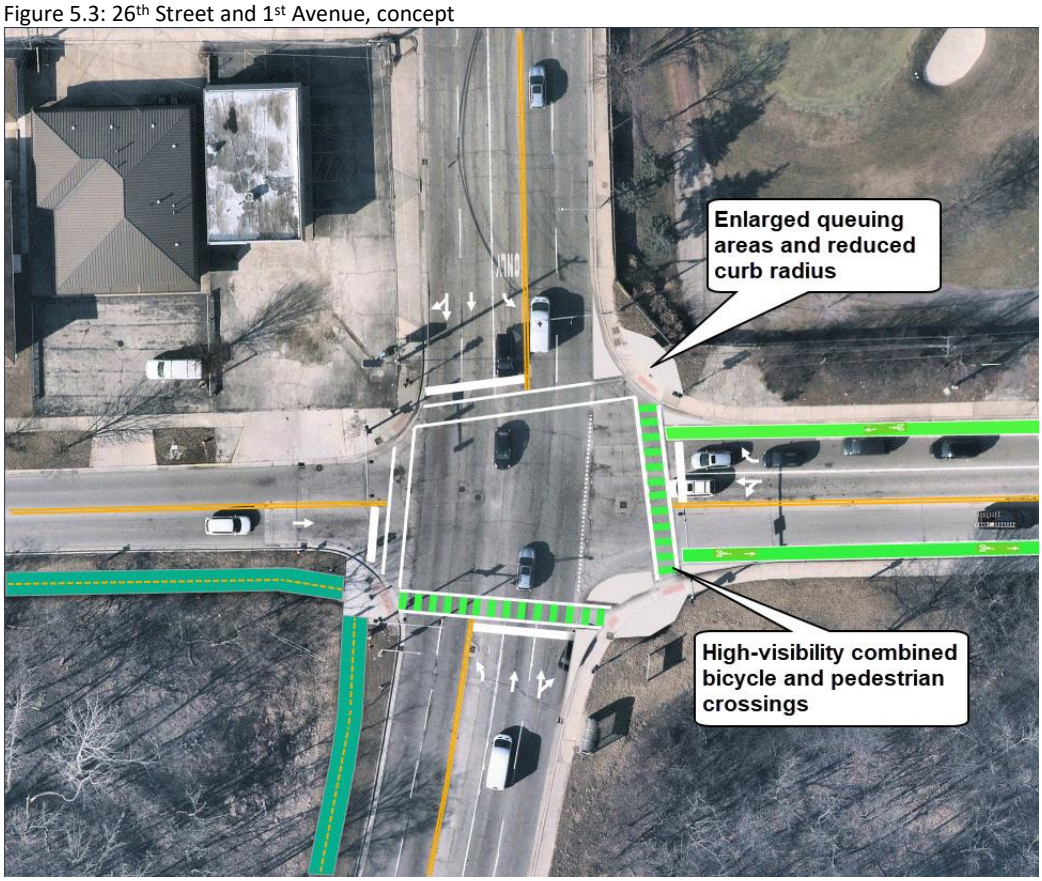
We recommend that IDOT and local agencies look for opportunities to collaborate to improve bicycle and pedestrian accommodation and crossings at this location. Improvements that should be considered for further engineering study include:

1. High-visibility, bicycle and pedestrian crosswalks on the east and south legs – either combined or separate, side-by-side crossings. See NACTO design guidance here.
2. Reduced curb/turn radii on the corners -- especially on the northeast and southeast corners -- in order to slow turning traffic, reduce crossing distances, and create more space for cyclists and pedestrians
3. Enlarge off-street, curbside waiting / queuing areas at the northeast and southeast corners in order to provide space for bicyclists to move off-street to re-orient themselves toward the crosswalks.

Figure 5.2: Example of combined bicycle and pedestrian high-visibility crossing

Source: City of Richmond, VA

Figure 5.3: 26th Street and 1st Avenue, concept



Source: Nearmap.com (altered)

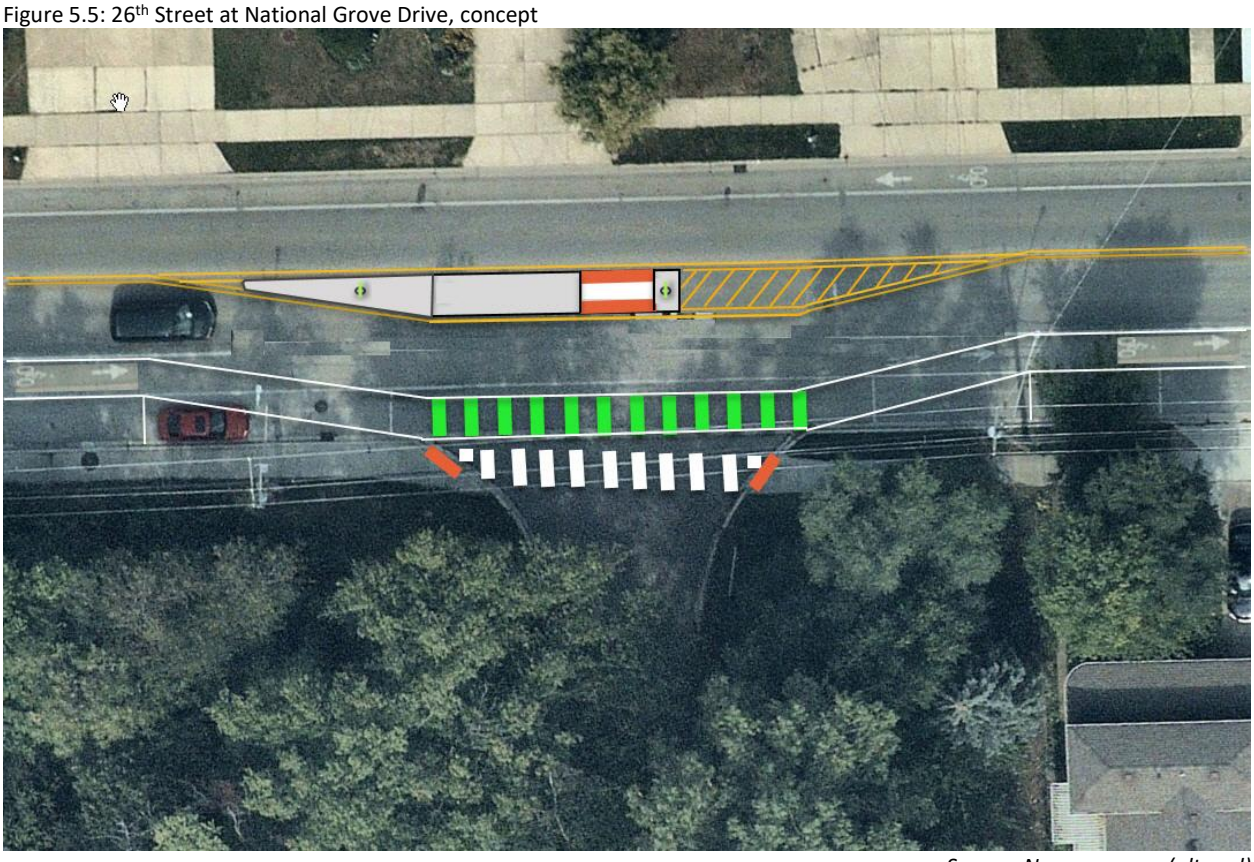
2 – 26th Street and National Grove Drive

The entrance/exit drive for National Grove Woods parking and picnic area is located on the south side of 26th Street, just east of Salt Creek. Currently, cyclists traveling west-bound in the existing 26th Street bike lane, who desire to turn left into National Grove, as well as cyclists exiting National Grove and turning left to proceed west-bound on 26th Street, face a challenging movement across two lanes of traffic. In order to reduce exposure and potential conflicts, we recommend that local agencies study the possibility of installing a raised center median to function as a bicycle refuge island. To make room for this median, the existing east-bound travel and bicycle lane would be reconfigured as shown in Figure 5.5. This deflection would provide the additional, potential benefit of reducing speeds. A new marked pedestrian crosswalk, adjacent to the bike lane, should also be installed. The design may require the removal of 2-3 parking spots on the south side of 26th Street, near the National Grove entrance drive. However, these spots appear to be underutilized, with ample additional parking nearby. Further study will be required to determine feasibility of the median and ensure that it functions as intended and contributes to the safety of all roadway users.

Figure 5.4: Example of bicycle refuge island on road with bike lanes

Source: Dan Burden

Figure 5.5: 26th Street at National Grove Drive, concept



Source: Nearmap.com (altered)

3 – National Grove and 27th Street

At present, an informal, pedestrian "use" trail connects the cul-de-sac at the end of National Grove Drive with the west end of 27th Street. We recommend that the FPCC work with local agencies (specifically, the Village of North Riverside) to formalize and improve this cut-through to function as a shared use path. An improved bicycle and pedestrian connection here -- combined with the refuge island discussed above (#2) -- would allow cyclists and pedestrians from the Villages of Riverside and North Riverside to avoid the segment of Des Plaines Avenue between 27th Street/Northgate Road/Bartram Road and 26th Street and the intersection of Des Plaines Avenue and 26th Street, which area cyclists characterize as "challenging" and "difficult." This characterization was confirmed by field investigation and preliminary roadway and traffic analysis.

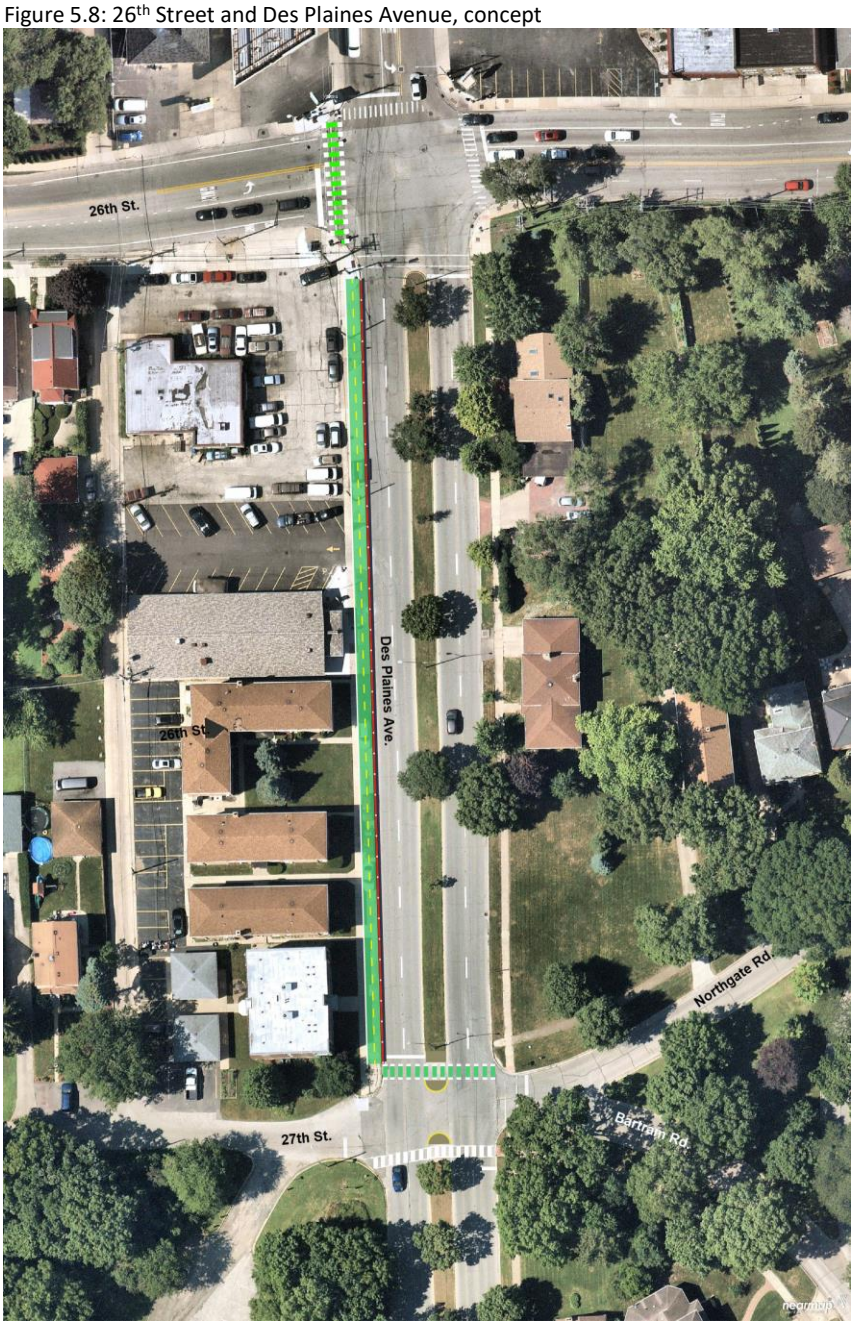
Figures 5.6 and 5.7: National Grove - 27th Street cut-through

Source: Google Streetview and Nearmap.com

4 – 26th Street and Des Plaines Avenue

Improvements described above (#2 and #3) would allow bicyclists and pedestrians to avoid the difficult and constrained stretch of Des Plaines Avenue between 27th Street/ Northgate Road/Bartram Road and 26th Street, and the challenging intersection of Des Plaines Avenue and 26th Street. Neverthless, improvements for bicyclists and pedestrians along this stretch have also been considered. Although the ROW is highly constrained, one possibility, for which more detailed study would be needed, would be to remove parking along the west side of Des Plaines Avenue and install a two-way separated bikeway, approximately 510 feet in length. Combined with intersection improvements at both 27th Street/Northgate Road/Bartram Road and at 26th Street, this would provide a low stress connection to the existing bike lanes on 26th Street, which in turn lead to the Salt Creek Greenway Trail. It should be noted that the presence of multi-family housing on this stretch of Des Plaines Avenue may make the removal of on-street parking difficult. Note that this segment of Des Plaines Avenue is under IDOT jurisdiction, who would require that the Village of North Riverside have specialized maintenance vehicles to plow and clean the protected bike lane.

Figure 5.8: 26th Street and Des Plaines Avenue, concept



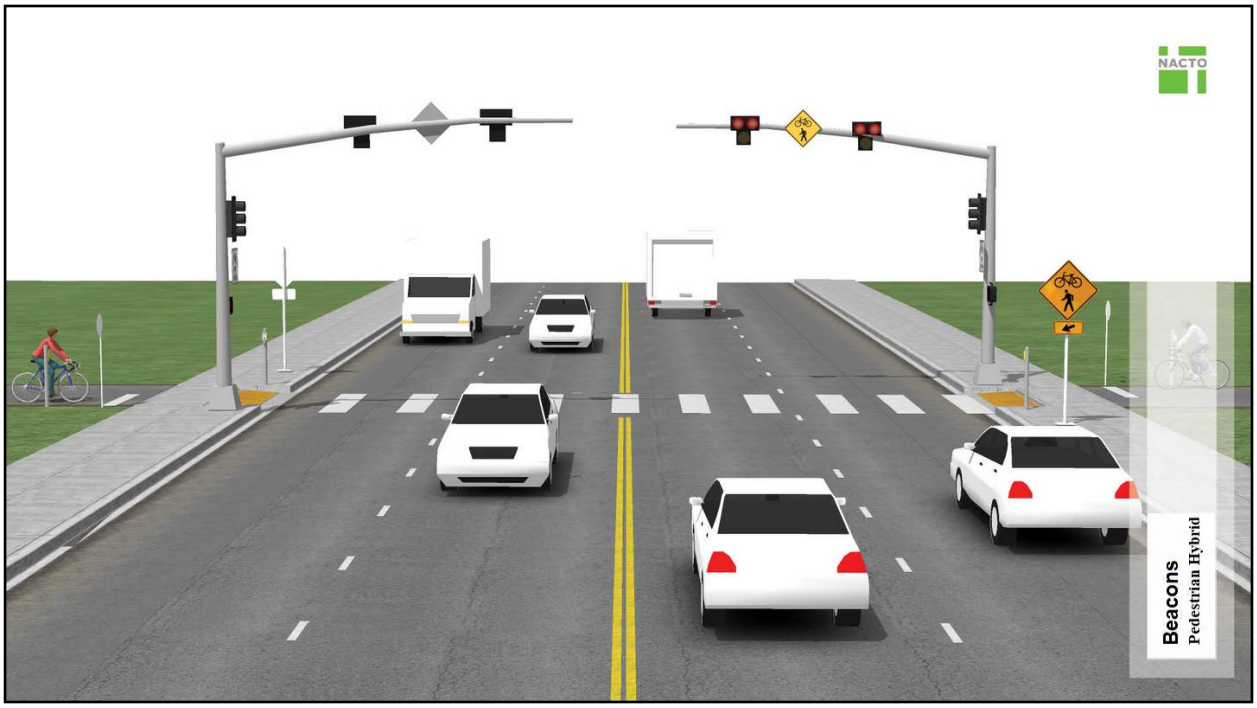
Source: Nearmap.com (altered)

5 – 31st Street and Brookfield Woods entrance drive

In order to provide safe bicycle and pedestrian travel between the Villages of Brookfield and Riverside and destinations along 31st Street, including Brookfield Woods and the Zoo, we've recommended that a sidepath be installed along the south side of 31st between Prairie Avenue and 1st Avenue (and, if feasible, further east, to Des Plaines Avenue/Woodside Road). We also recommended that a sidewalk be installed on the north side between Prairie Avenue and the Brookfield Woods entrance drive. (See

Section 4, 31st Street Community Connector Route.) However, in addition to linear facilities along 31st Street, safe, convenient crossings are also needed. We recommend that IDOT and local agencies study the feasibility of installing a pedestrian-activated traffic signal or pedestrian hybrid beacon (PHB) at the intersection of 31st Street and the Brookfield Woods entrance drive, or alternatively at the intersection of 31st Street and McCormick Avenue, in order to provide safe bicycle and pedestrian access between the proposed sidepath and Brookfield Woods. PHBs are one of FHWA's proven safety countermeasures and are specifically designed to help pedestrians safely cross busy or higher-speed roadways at midblock crossings and uncontrolled intersections. PHBs are particularly suited to locations where popular trails -- which attract families with children, as well as less experienced or skilled bicyclists -- cross higher speed, higher volume roadways. Pedestrian hybrid beacons may be installed without meeting traffic signal control warrants. The need should be considered on the basis of an engineering study that considers land use context and nearby destinations, motor vehicle speeds, major-street volumes, and gaps. For more information on PHBs, see the FHWA website and FHWA Recommendations and Case Study, as well as NACTO's Urban Bikeway Design Guide and the 2009 MUTCD, Chapter 4F.

Figure 5.9: Pedestrian hybrid beacon



Source: NACTO

6 – McCormick Avenue / Zoo parking

At present, accommodation for bicyclists traveling between the Salt Creek Greenway Trail / Brookfield Woods trailhead and Brookfield Zoo's north entrance plaza is minimal. Wayfinding and signage is insufficient and bicycle parking at the Zoo is sub-standard. We recommend, therefore, that the Zoo, FPCC, and local agencies work together to study options for improving bicycle and pedestrian access between the Salt Creek Greenway Trail / Brookfield Woods area and the plaza where the Zoo's pay kiosks and underpass are located. Improving access to the Zoo from the existing Salt Creek Greenway Trail could have significant benefits, in terms of increased visitorship, reduced demand for parking, and easing of congestion on surrounding roads.

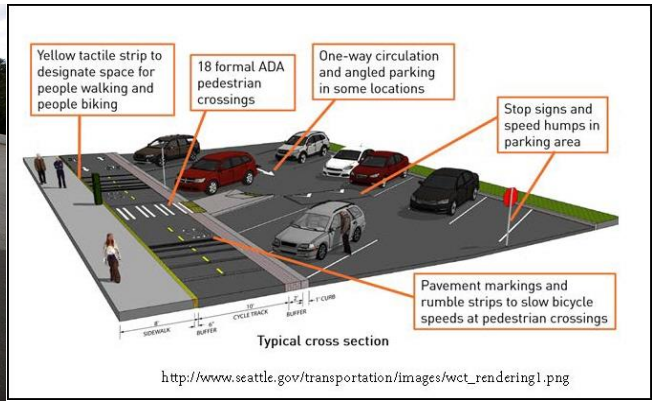
Figure 5.10: McCormick Avenue / Brookfield Zoo North Entrance, concept

Source: Nearmap.com (altered)

The concept illustrated above calls for formalizing, through enhanced pavement markings, the bike route between McCormick Avenue (which leads to the Salt Creek Greenway Trail) and the pay kiosk area, as well as areas to the east, near Golfview Avenue. Two new covered bike parking structures are shown: one for bicyclists arriving from McCormick Avenue, and the other, which is shown in more detail below in connection with proposed improvements to the intersection of Golfview Avenue and 31st Street, is for bicyclists arriving from the proposed sidepath on the south side of 31st Street between Prairie Avenue and 1st Avenue (where it would connects to the existing 1st Avenue trail). Figure 5.10 is conceptual; further study/engineering may determine that bike lanes or off-street facilities (bikeway or shared-use paths) may be more feasible and provide better accommodation than the marked shared lane markings shown in Figure 5.10.

Figure 5.11: Examples of trails/bikeways through parking lots

Figure 5.11 continued: Examples of trails/bikeways through parking lots

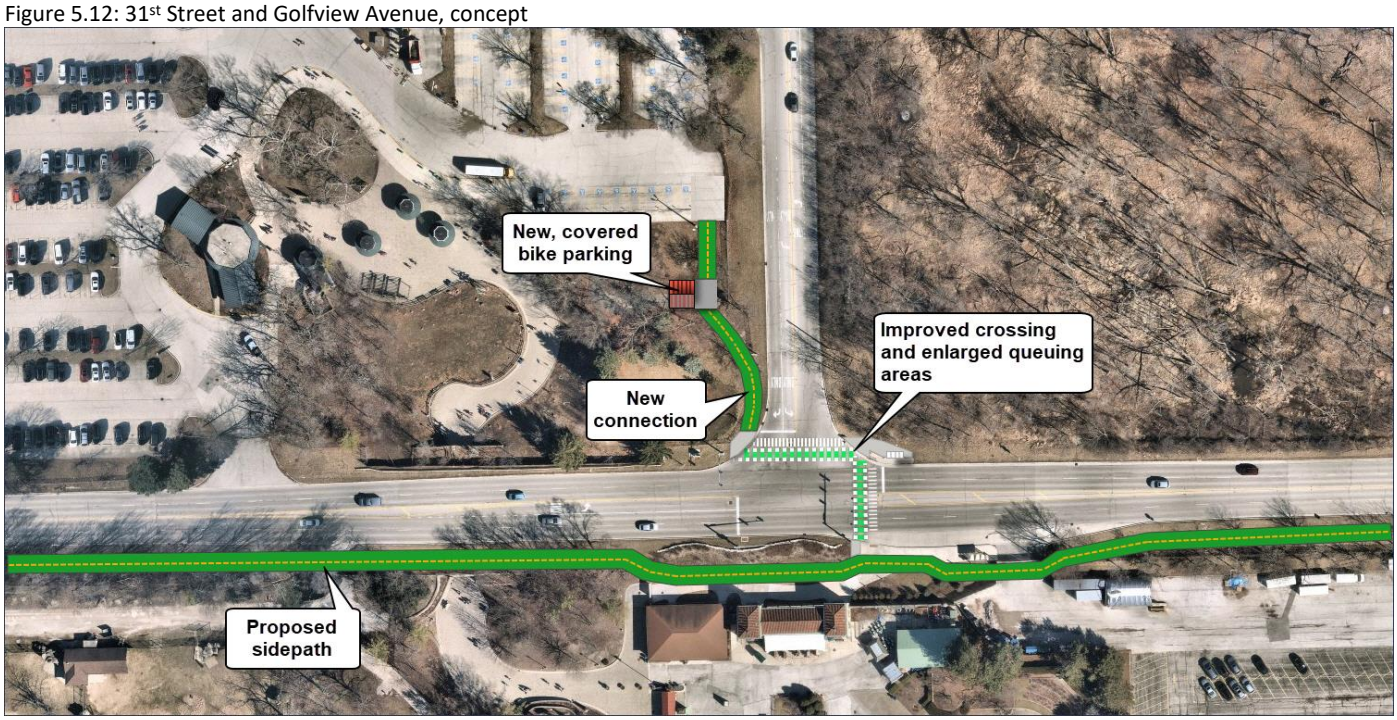


Source: Google Streetview and Seattle DOT

7 – 31st Street and Golfview Avenue

The T-intersection of 31st Street and Golfview Avenue is signalized. Pace bus stops (Route 331) are located on the northeast corner and on the south side of 31st Street, where a small plaza/path connects the stop to an at-grade entrance to the Zoo. A marked crossing exists on the east leg only. No crosswalks exist on the north and west legs and the intersection lacks any connecting sidewalks. The proposed sidepath on the south side of 31st Street between Prairie Avenue and 1st Avenue (see Section 3), will provide a valuable east-west connection and access to the Zoo, which is currently lacking. However, a direct bicycle and pedestrian connection from this intersection to the pay kiosk area and the underpass would improve access, and increase safety and convenience of Zoo visitors arriving by bicycle.

Figure 5.12: 31st Street and Golfview Avenue, concept



Source: Nearmap.com (altered)

The comfort and convenience of bicyclists and other trail users could be improved by the addition of high-quality, covered bicycle parking near the pay kiosk area. Preliminary analysis suggests that land east of the underpass would provide an opportunity, and excellent location, for this parking and for a path connecting the intersection to it and to the kiosk area.

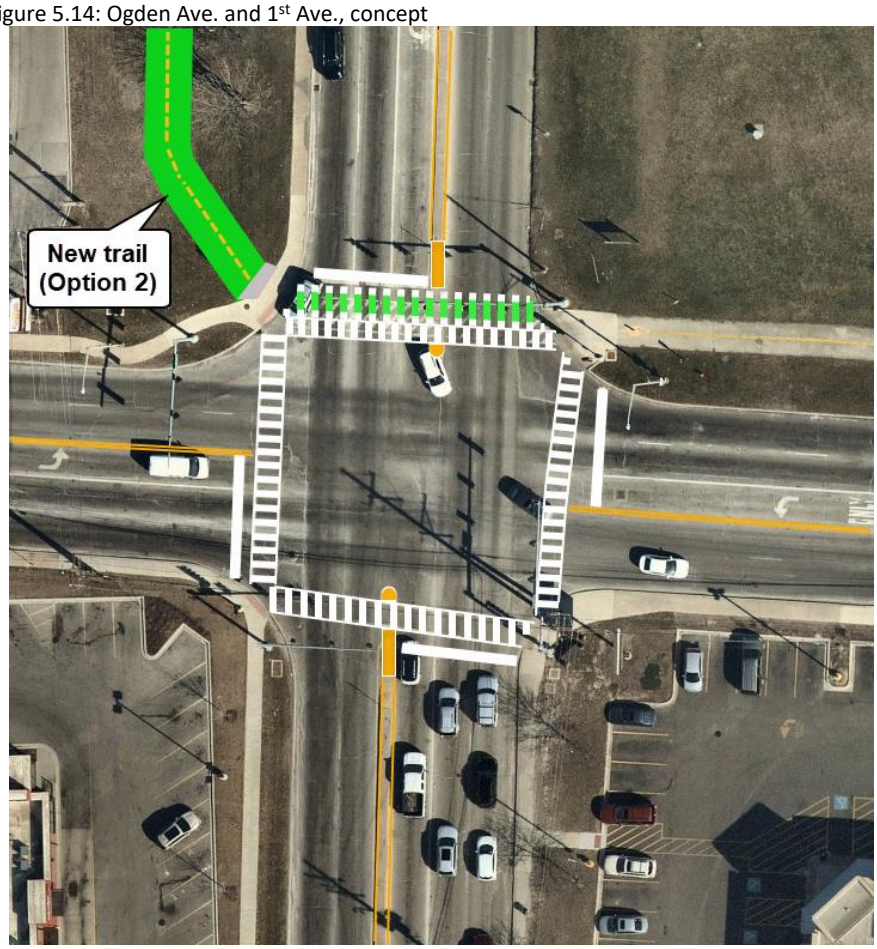
8 – 1st Avenue and Ogden Avenue

Large, multi-lane intersections -- even when signalized -- may present challenges to bicyclists and pedestrians who must cross them -- especially younger, less experienced and slower or mobility-challenged individuals. We recommend improvements, such as separate crosswalks for bicyclists and pedestrians, raised center and/or corner medians, "bull-nose" median extensions, high visibility crosswalks, and advance stop bars at these crossings. Operational treatments such as extended walk times, manual or automated actuation, pedestrian count-down signals, and leading pedestrian intervals should also be considered.

Figure 5.13: Separate bicycle and pedestrian crossings

Source: Dylan Passmore

Figure 5.14: Ogden Ave. and 1st Ave., concept

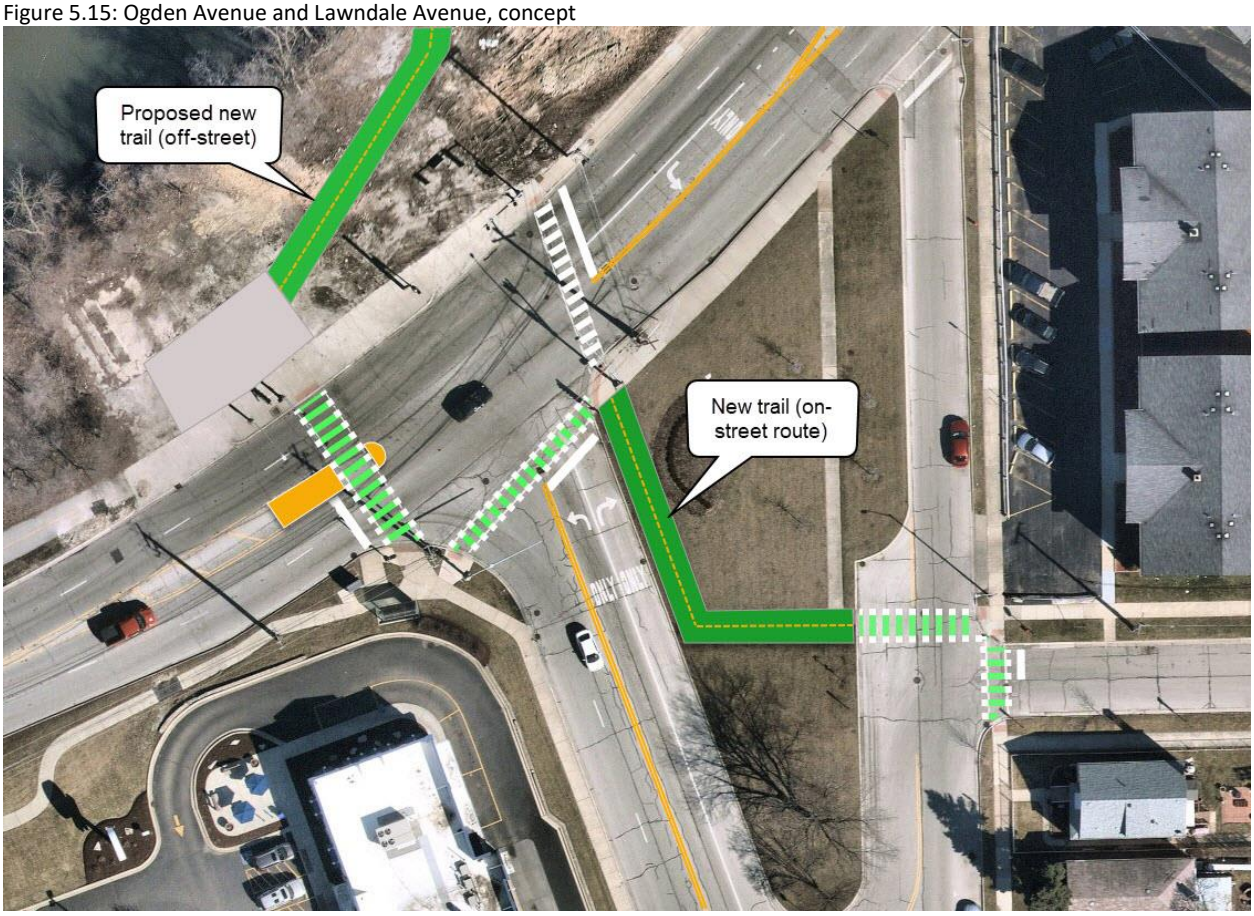


Source: Nearmap.com (altered)

9 – Ogden Avenue and Lawndale Avenue

If the current on-street route through the Village of Lyons is maintained, then improvements to the Ogden Avenue - Lawndale Avenue intersection are recommended. If the proposed trail alignment on the new land that has emerged as a result of the removal of Hoffman Dam (Options 1 and 2) is implemented, then these improvements would be unnecessary or, at least, a lower priority.

Figure 5.15: Ogden Avenue and Lawndale Avenue, concept

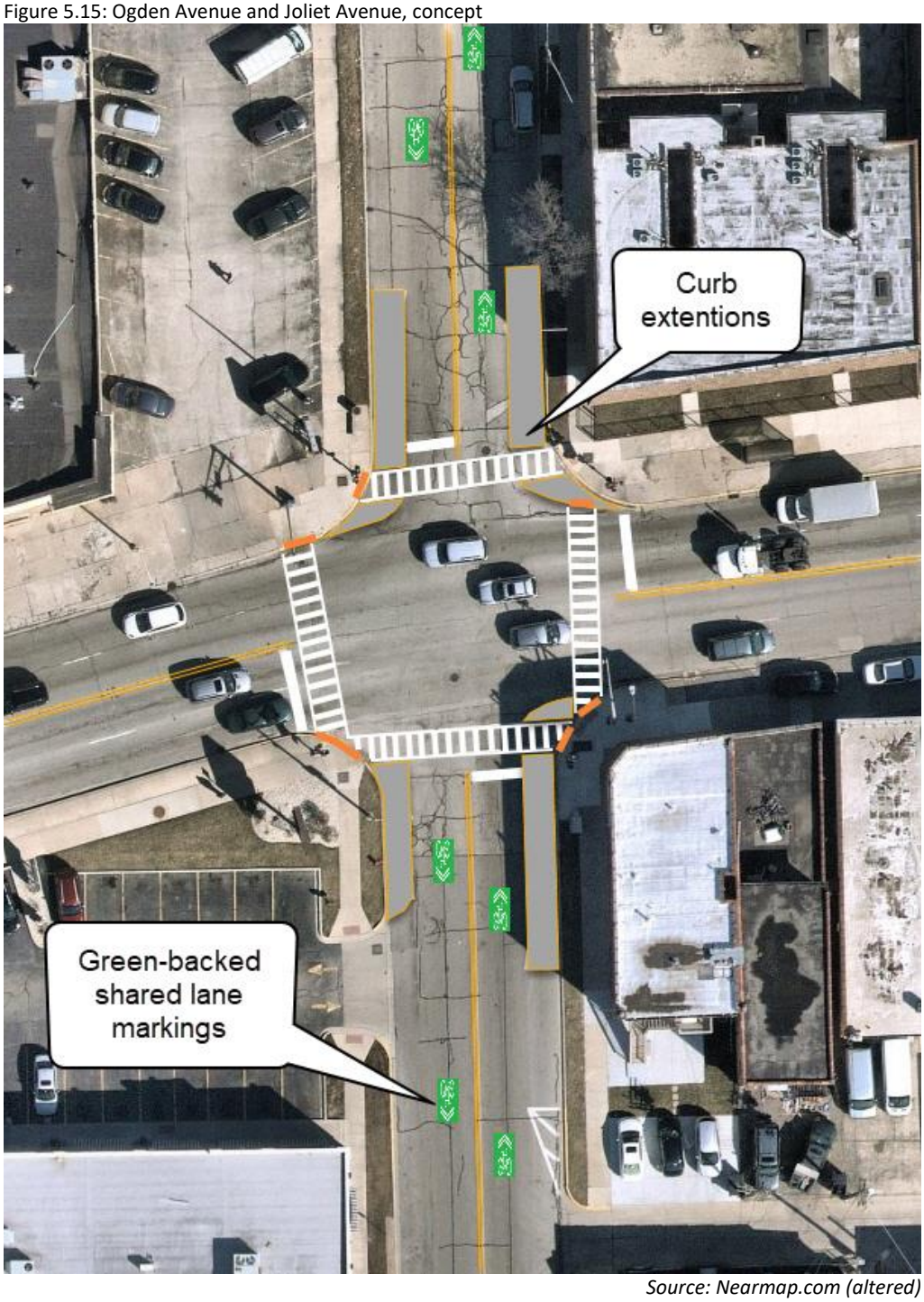


Source: Nearmap.com (altered)

10 – Ogden Avenue and Joliet Avenue

If the current on-street route through the Village of Lyons is maintained, then improvements to the Ogden Avenue - Joliet Avenue intersection are recommended. IDOT has in fact proposed intersection improvements at Ogden Avenue and Joliet Avenue, as part of a project to add left turn lanes on Ogden for both east- and westbound traffic. We therefore recommend that the Village of Lyons coordinate with IDOT to ensure that appropriate bicycle and pedestrian safety improvements and traffic calming treatments are included as part of design. If the proposed trail alignment on the new land that has emerged as a result of the removal of Hoffman Dam (Options 1 and 2) is implemented, then these improvements would be unnecessary or, at least, a lower priority.

Figure 5.15: Ogden Avenue and Joliet Avenue, concept

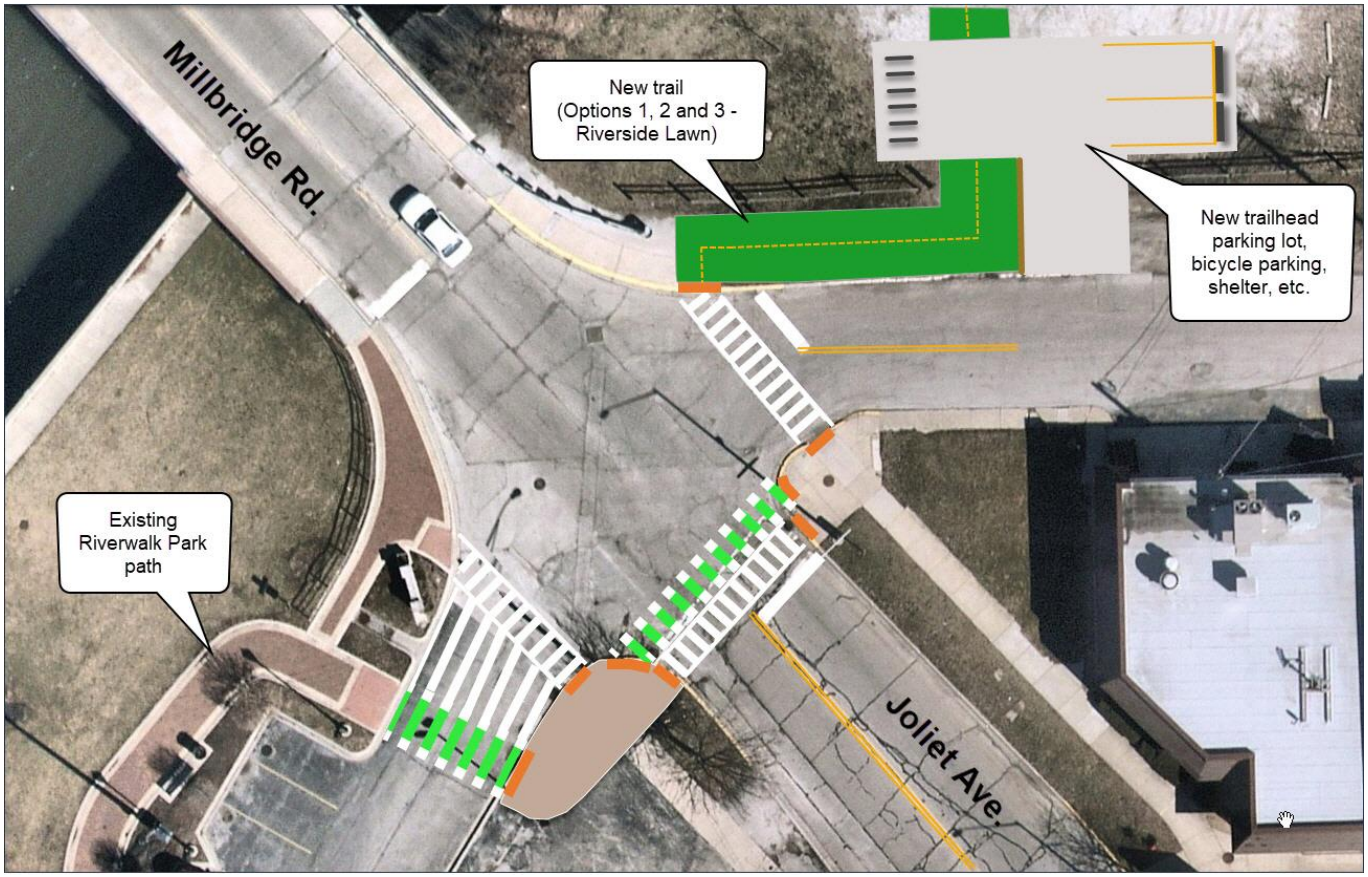


Source: Nearmap.com (altered)

11 – Joliet Avenue/Millbridge Road and 39th Street

At the intersection of Joliet Avenue/Millbridge Road and 39th Street, we recommend an improved connection and crossings between the existing Riverwalk Park path (proposed alignment of Option 1 and 2) and the proposed new trail alignment in Riverside Lawn (Options 1, 2, and 3). We also recommend that the FPCC consider improving the existing gravel parking lot to better function as a trailhead. Potential improvements could include automobile and bicycle parking, signage/wayfinding, and other amenities (shade canopy, picnic table, water fountain, toilet, interpretive panels, etc.). (Please note that Figure 5.16 – as is the case with all spot location design concepts – is for illustrative purposes only.)

Figure 5.16: Joliet Avenue/Millbridge Road and 39th Street, concept



Source: Nearmap.com (altered)

12 – Cermak-Ottawa Woods Trail at Ogden Avenue

We recommend that IDOT and local agencies study the feasibility of installing a pedestrian-activated traffic signal or pedestrian hybrid beacon (PHB) at the intersection of Shakespeare Avenue and Ogden Avenue where the proposed trail alignment (and current on-street route) meet the existing Cermak-Ottawa Woods Trail. See Spot Location 5 (*31st Street and Brookfield Woods entrance drive*) for more information on PHBs. Additional locations, south of the study area, where PHBs should be considered include the Cermak-Ottawa Woods Trail crossings over Joliet Road (Historic Route 66) and over 47th Street.

Figure 5.17: Pedestrian Hybrid Beacon

Source: Mike Cynecki / Tucson DOT

Appendix. Supporting Policies, Programs, and Funding Sources

The primary focus of this study is to identify potential alignments for the Des Plaines River Trail/Salt Creek Greenway and key community connections to the trail. This section supports that goal by providing recommendations on ways to encourage trail usage and build a culture of safe, convenient, and accessible biking and walking. Specifically, this section highlights policies, programs, and funding sources that have been used successfully to support active transportation and recreation in other parts of the region. The tools and resources included below are intended to ensure communities in the study area receive the maximum benefit possible from the trail extension project, while also advancing their own transportation, sustainability, and economic goals. The policies and programs described here are provided as a resource primarily for the FPCC's partners.

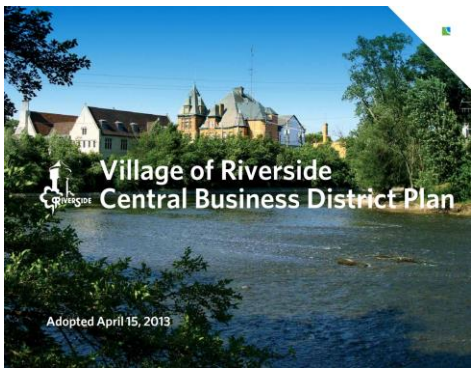
Policies

Local policies and regulations—including long-range plans, zoning codes, urban design standards, and others—are important tools for supporting active transportation and recreation. Updating these policies can be a small, but effective way of supporting the broader goals of the trail extension project. Though not an exhaustive list, several high-impact policies are listed below.

Integrate the Des Plaines River Trail/Salt Creek Greenway extension, and key community connector routes, into existing and future municipal plans

Completion of the trail extension project, and eventual integration of the trail within a larger network of bicycle and pedestrian-friendly streets and paths, will be a long-term project requiring coordination between various municipal departments and jurisdictions. To facilitate this work, municipalities in the study area should integrate the project, and supportive policies, into their long-range plans. This includes both the physical trail alignment and connector routes, as well as the policies and programs discussed below.

Figure 6.11. Existing long range plans in the study area



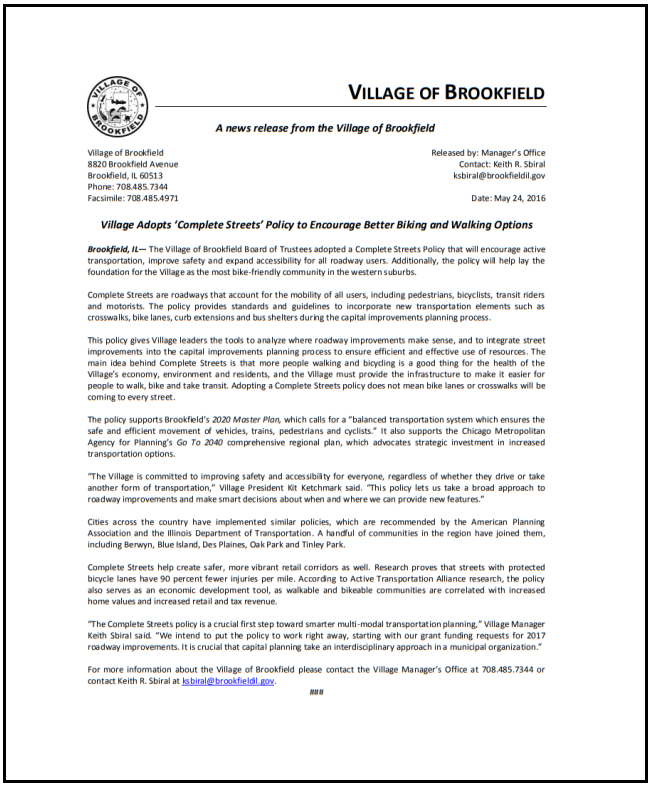
Integrate the Des Plaines River Trail/Salt Creek Greenway extension, and key community connector routes, into municipal capital improvement plans

Many of the recommendations included in this report require infrastructure improvements. To ensure these improvements are made, municipalities in the study area should include the trail extension, community connector routes, and other bicycle and pedestrian improvements in their capital improvement plans (CIPs). Currently the Villages of Brookfield and Riverside maintain CIPs, but Lyons and North Riverside do not.

Develop and implement Complete Streets polices and continue to improve and expand local pedestrian and bicycle networks

Complete Streets is an approach to urban planning and design that seeks to build and maintain a transportation system that is safe and accessible for everyone, whether they are in a car, on foot, riding a bike, or using public transit. Complete Streets strategies typically focus on improving the safety and comfort of vulnerable road users, such as people walking or riding bikes, through traffic calming, the inclusion of high-quality bikeways and sidewalks, and intersection improvements. The Villages of Brookfield, Lyons, and Riverside have all either adopted Complete Streets ordinances or highlighted the approach in their comprehensive or other plans. Adopting and/or continuing to implement Complete Streets policies and strategies in all roadway construction and maintenance projects will help to connect additional residents and businesses to the Des Plaines River Trail/Salt Creek Greenway and other destinations, improve safety for all roadway users, and help to promote walking and biking in the community.

Figure 6.2. Press release announce the Village of Brookfield Complete Streets Policy



VILLAGE OF BROOKFIELD

A news release from the Village of Brookfield

Village of Brookfield
8820 Brookfield Avenue
Brookfield, IL 60513
Phone: 708.485.7344
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Released by: Manager's Office
Contact: Keith R. Sbiral
ksbiral@brookfieldil.gov

Date: May 24, 2016

Village Adopts 'Complete Streets' Policy to Encourage Better Biking and Walking Options

Brookfield, IL— The Village of Brookfield Board of Trustees adopted a Complete Streets Policy that will encourage active transportation, improve safety and expand accessibility for all roadway users. Additionally, the policy will help lay the foundation for the Village as the most bike-friendly community in the western suburbs.

Complete Streets are roadways that account for the mobility of all users, including pedestrians, bicyclists, transit riders and motorists. The policy provides standards and guidelines to incorporate new transportation elements such as crosswalks, bike lanes, curb extensions and bus shelters during the capital improvements planning process.

This policy gives Village leaders the tools to analyze where roadway improvements make sense, and to integrate street improvements into the capital improvements planning process to ensure efficient and effective use of resources. The main idea behind Complete Streets is that more people walking and bicycling is a good thing for the health of the Village's economy, environment and residents, and the Village must provide the infrastructure to make it easier for people to walk, bike and take transit. Adopting a Complete Streets policy does not mean bike lanes or crosswalks will be coming to every street.

The policy supports Brookfield's *2020 Master Plan*, which calls for a "balanced transportation system which ensures the safe and efficient movement of vehicles, trains, pedestrians and cyclists." It also supports the Chicago Metropolitan Agency for Planning's *Go To 2040* comprehensive regional plan, which advocates strategic investment in increased transportation options.

"The Village is committed to improving safety and accessibility for everyone, regardless of whether they drive or take another form of transportation," Village President Kit Ketchmark said. "This policy lets us take a broad approach to roadway improvements and make smart decisions about when and where we can provide new features."

Cities across the country have implemented similar policies, which are recommended by the American Planning Association and the Illinois Department of Transportation. A handful of communities in the region have joined them, including Berwyn, Blue Island, Des Plaines, Oak Park and Tinley Park.

Complete Streets help create safer, more vibrant retail corridors as well. Research proves that streets with protected bicycle lanes have 90 percent fewer injuries per mile. According to Active Transportation Alliance research, the policy also serves as an economic development tool, as walkable and bikeable communities are correlated with increased home values and increased retail and tax revenue.

"The Complete Streets policy is a crucial first step toward smarter multi-modal transportation planning," Village Manager Keith Sbiral said. "We intend to put the policy to work right away, starting with our grant funding requests for 2017 roadway improvements. It is crucial that capital planning take an interdisciplinary approach in a municipal organization."

For more information about the Village of Brookfield please contact the Village Manager's Office at 708.485.7344 or contact Keith R. Sbiral at ksbiral@brookfieldil.gov.

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Develop and adopt bicycle parking policy, ordinance, or program

Municipal policies, ordinances, and programs often affect bicycle-friendliness in unexpected ways. Zoning codes, design guidelines, and permitting processes may encourage, require, or restrict bicycle parking, and in many cases, these regulations are several decades old, and do not reflect the current status or preferences of the community. The basic purpose of bicycle parking ordinances, policies, and programs are to ensure the provision of adequate, functional bicycle parking, based on current and future demand. Inadequate parking at end-of-trip locations is commonly cited as a reason for not cycling. Key destinations, such as downtown commercial districts, transit stations, government buildings, schools, and cultural attractions are prime locations for high-quality bicycle parking. More information on bicycle parking is available through the Association of Pedestrian & Bicycle Professionals. More information on bicycle parking ordinances, including helpful tips and sample ordinances, is available through ChangeLab Solutions and the Humboldt County Association of Governments.

Adopt a Vision Zero policy or strategy

Vision Zero is an approach to road safety and urban design that seeks to eliminate all traffic fatalities. Typically, Vision Zero strategies begin by addressing the challenges facing the most vulnerable road users—bicyclists and pedestrians—by providing better facilities and managing speed to enhance safety. Because these strategies reduce the frequency and severity of collisions, they not only improve safety for cyclists and pedestrians, but also for motorists and transit riders. In addition to traffic calming, multimodal road design, and speed management, Vision Zero strategies also emphasize:

- Building leadership, collaboration, and accountability around traffic safety among a diverse group of stakeholders, including transportation professionals, policymakers, public health officials, police, and community members
- Collecting and utilizing data to establish priorities and develop actions
- Prioritizing equity and community engagement
- Setting a timeline to achieve zero traffic deaths and serious injuries

By adopting Vision Zero policies and strategies, local communities can help to create a road network that is safer and more conducive to walking and biking, which will help to integrate the Des Plaines River Trail/Salt Creek Greenway into the community at large.

Pursue Bicycle Friendly Community designation

The League of American Bicyclists has managed the Bicycle Friendly Communities program since 1995. As of 2019, 464 communities have received the Bicycle Friendly Community designation, including 19 in the State of Illinois. Locally, Elmhurst, Evanston, Oak Park, and Wilmette have all received the designation.

Figure 6.3. Bicycle Friendly Community placard

To apply for Bicycle Friendly Community designation, an interested municipality completes a short application answering questions pertaining to bicycle friendliness. These questions range from the quality and quantity of bike lanes and bike racks, to educational programs, municipal policies, and public safety enforcement. For communities that may not yet qualify for Bicycle Friendly Community designation, this application provides a great summary of helpful strategies for making bike travel safer and more appealing for riders of all comfort levels.

Create a bicycle and pedestrian commission, committee, or task force

Establishing a dedicated working group to support the advancement of the trail extension, community connector routes, and other projects, as well as bicycle/pedestrian supportive policies and programs is a great strategy for ensuring the recommendations of this report become a reality. Ideally, this group would be comprised of a combination of a municipal staff liaison (from community development, planning, engineering, or public works), representatives from other government departments or agencies (such as the park and/or school districts) representatives of local businesses and non-profits, bicycling club members, and other interested community leaders and residents.

Improve data collection on bicycle and pedestrian crashes

Data collection is critical for identifying and correcting major problem areas for bicycle and pedestrian safety. To this end, local police should collect, archive, and report on data related to pedestrian and bicycle crashes. Specifically, these data should include date, time and location of the crash, crash severity, cause and related factors, number of people/vehicles involved, and other relevant details

about the incident. This information should be analyzed and interpreted for trends and patterns that might help determine and prioritize countermeasures. The crash data, after being anonymized, should made available to the public.

Programs

To ensure that the trail extension project is a success, and to maximize the project's benefit to local residents and businesses, communities in the study area should explore supportive programs designed to encourage usage of nearby trails – and bicycling and walking generally – and to develop safe, sustainable behaviors and habits. Several programs that have worked in other communities are listed below.

Develop and lead bicycle safety training events for adults and children

Establishing safe bicycle habits and skills among children is a great way to encourage a lifetime of safe biking. At the same time, many adults have an interest in biking (or biking more often), but have concerns about safety. Educational programming can address both of these concerns. Ideally, classes for children and teenagers should be integrated into physical education or health classes at school, with supplementary classes offered at libraries, parks, festivals, and other community-wide events. Adult classes should be held at convenient times and locations for residents, including libraries, cafes, and special community events. These courses should include information on bicycling skills and safe behavior, safe routes, and basic bicycle maintenance. Both adults and children may benefit from taking the online Bicycle Safety Quiz, developed by Ride Illinois and which has separate quizzes/modules for child cyclists, adult cyclists, motorists, and truck drivers. There is also a quiz/module specifically for students in Drivers Education courses. Municipalities, local bicycling clubs, businesses, civic organizations, schools, and police departments in the study area should utilize and promote the Bicycle Safety Quiz in trainings, at events, and through their respective websites and newsletters.

Encourage local participation in bike-to-work and bike-to-school events

Bike-to-work and bike-to-school events are a great way to encourage casual riders to consider making biking a more central part of their daily commute. Each spring, the Active Transportation Alliance hosts a region-wide Bike to Work Challenge that brings together thousands of riders from hundreds of businesses, organizations, and agencies throughout Chicagoland. In addition to the challenge itself—logging trips and miles for work commutes—the event also features a series of bicycle safety trainings, bike rallies, morning pit stops, happy hours, and other events to encourage participation. Whether local businesses, schools, and governments decide to participate in the Active Transportation Alliance event, or develop a comparable event of their own, it is a great model for encouraging utilitarian bicycling in the community.

Safe Routes to School (SRTS) is a program and approach that promotes walking and bicycling to school through infrastructure improvements, enforcement, planning tools, safety education, and incentives to encourage walking and bicycling to school. The National Center for Safe Routes to School publishes the SRTS Guide and maintains the website, Walk & Bike to School. The Safe Routes Partnership offers numerous resources.

Figure 6.4. Cyclists drinking coffee at an Active Transportation Alliance Winter Bike to Work Rally

Photo credit: Active Transportation Alliance

Host community-wide bicycle and active living events for people of all ages and abilities
In addition to bike-to-school and bike-to-work events, many communities have had success building support for biking and walking through one-time and recurring events such as community or group bike rides for riders of all ages, "bike rodeos" for children, Open Streets events, "bike everywhere days," and others. These events could be timed to coincide with the opening of new trail segments or other bicycle facilities or amenities, or on a recurring basis to provide predictability for residents and visitors. An example which already exists in one of the study area communities is Bike Brookfield!

Develop and disseminate informational materials explaining tips and benefits of bicycle and pedestrian transportation
Community-specific bicycle and pedestrian information, including maps, regulation/policy guides, and commuter tips can be a great tool for residents and visitors who are interested in active transportation and recreation. These resources can be particularly useful for helping people find local points of interest (parks, businesses, schools, and institutions), identify safe routes, and answer questions about bicycle requirements, bicycle storage, or accessing the HOPR bike share system.

Provide bicycle and pedestrian safety and enforcement training for local police officers
Traffic enforcement is critical to bicycle and pedestrian safety. To ensure police officers are providing the highest quality service to their community, local police departments should provide trainings that focusses on active transportation issues and state and local laws related to cycling and walking. Specifically, the trainings should emphasize the importance of the enforcement of laws requiring motorists to obey speed limits and stop for pedestrians in schools zones, crosswalks, and at trail crossing

locations. Municipalities and police departments can establish and promote bicycle-mounted patrols. The Law Enforcement Bicycle Association, National Highway Traffic Safety Administration, and Pedestrian and Bicycle Information Center all provide information that may be relevant to these trainings. Enforcement of speed limits – after setting speed limits at the appropriate levels where bicyclists and pedestrians are likely present – and of the law directing drivers to yield and stop for pedestrians at crossing locations should be enforcement and training priorities.

Funding

Funding is a critical consideration for the engineering and construction of the trail extension and community connector routes, as well as for many of the programs and polices discussed in this section. Grants and other non-traditional funding sources—in combination with general fund contributions—will be important to realizing the full benefits of this project. Several potential government funding sources – all competitive and requiring local matches – are discussed here.

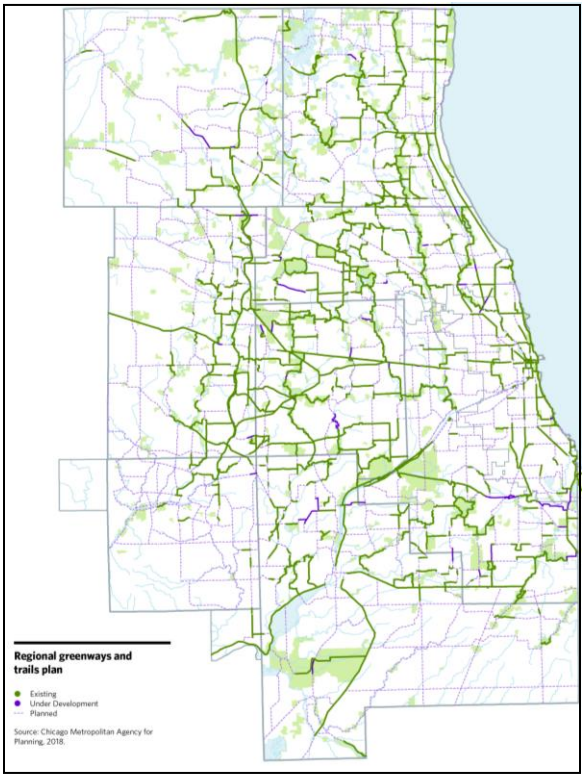
Congestion Mitigation and Air Quality (CMAQ) Program

The Congestion Mitigation and Air Quality (CMAQ) Program is a federally funded grant program administered by CMAP. CMAQ grants are tied directly to air quality, and all projects funded through CMAQ in northeastern Illinois must reduce ground level ozone or PM2.5 emissions. Generally, this includes projects that reduce congestion or encourage people to shift trips to less-polluting modes, such as walking, biking, or transit.

Transportation Alternatives Program (TAP)

The Transportation Alternatives Program (TAP) is a federally funded grant program for non-motorized transportation projects. In northeastern Illinois, TAP grants are awarded by CMAP, which uses a competitive process informed by the Regional Greenways and Trails Plan. The Des Plaines River Trail/Salt Creek Greenway extension project is included in this plan.

Figure 6.5. Regional Greenways and Trails Plan



Illinois Transportation Enhancement Program (ITEP)

The Illinois Transportation Enhancement Program, or ITEP, is a competitive grant program managed by the Illinois Department of Transportation for the purpose of promoting and developing alternative transportation options, such as biking and walking. ITEP money may also be used for streetscape beautification and other projects that enhance the historic, aesthetic or environmental impact of transportation infrastructure. Local governments and non-profits are eligible for ITEP grants, and matching funds are required.

Invest in Cook
Invest in Cook is an annual grant program operated by Cook County. The program is intended to fund transportation-related projects in the county, including bicycle and pedestrian infrastructure, roadway repair, and freight enhancements. In 2019, 27 municipalities received Invest in Cook grants totaling $8.5 million. Municipalities are eligible for Invest in Cook grants, and a local match may be required.

Motor Fuel Tax (MFT)
The Illinois Motor Fuel Tax (MFT) is a statewide charge on motor fuel used to maintain the public highway system. The Illinois Department of Transportation allocates revenue from the tax to counties, townships, and municipalities each month as outlined by the MFT fund distribution statue, 35 ILCS 505/8. MFT funds may be used for accessibility projects, street improvement, pedestrian crossing signals, bicycle facilities, and wayfinding signs, among other uses. MFT revenues may be used as a local match for federal grants.

Surface Transportation Shared Fund (STP Shared)
The STP Shared Fund is a federally funded grant program, administered by CMAP and designed to support larger-scale, regional projects that address regional performance measures and the goals of ON TO 2050. The programming authority distributed to the shared fund is derived from a set-aside of the region's annual allotment of STP-L funds. Project selection is a region-wide competitive process overseen by CMAP's STP Project Selection Committee.

Project eligibility is focused on projects of significant cost and multijurisdictional projects in eight categories that address federal performance measures and priorities of ON TO 2050: road reconstructions, transit station rehabilitation or reconstructions, bridge rehabilitation or reconstructions, highway/rail grade crossing improvements, road expansions, bus speed improvements, corridor-level or small area safety improvements, and truck route improvements. Evaluation criteria encourage projects to include Complete Streets elements and multimodal design.

Surface Transportation Local Programs (STP Local)
STP Local is a federally funded grant program administered by the region's eleven Councils of Mayors and the City of Chicago. Each Council and the City of Chicago develop their own performance-based programming and regional planning factors to incorporate into their project selection methodologies.

STP Local provides flexible funding that local agencies can use for projects on any federally eligible roadways, bridge projects on any public road, transit capital projects, or intercity and intercity bus terminals and facilities.

Recreational Trails Program (RTP)
The Recreational Trails Program (RTP) is a federal grant program managed by the Illinois Department of Natural Resources (IDNR). These funds may be used for motorized or non-motorized trails, and require a 20% non-federal match. In the past, IDNR has used this grant program to fund trail constriction and rehabilitation, restoration of natural areas adjacent to existing trails, and land acquisition for future trails.

Illinois Bicycle Path Program

The Illinois Bicycle Path Program is a grant program that provides local units of government with funding to develop, expand, and enhance non-motorized paths and trails. All local units of governments legally allowed to purchase and own land are eligible to apply for a grant, though a small, non-refundable application fee is required. Funds awarded through the program may be used for land acquisition, trail construction, signage, fencing, draining, or construction of support facilities, such as water fountains and restrooms. Illinois Bicycle Path Program grants will cover up to 50% of total project costs, with a maximum of $200,000 per year for development projects and no maximum for land acquisition.

Safe Routes to Schools

The Illinois Department of Transportation's Safe Routes to Schools Program provides funds to government and non-profit organizations for projects that make it is easier and safer for children to walk or bike to school. Safe Routes to Schools grants may be used for infrastructure projects, such as sidewalk and bike trail improvements, pedestrian crossing signals, and signage, or non-infrastructure projects, such as crossing guards, bicycle safety trainings, and other educational sessions. This program provides $6 million annually, with the majority going to infrastructure projects.